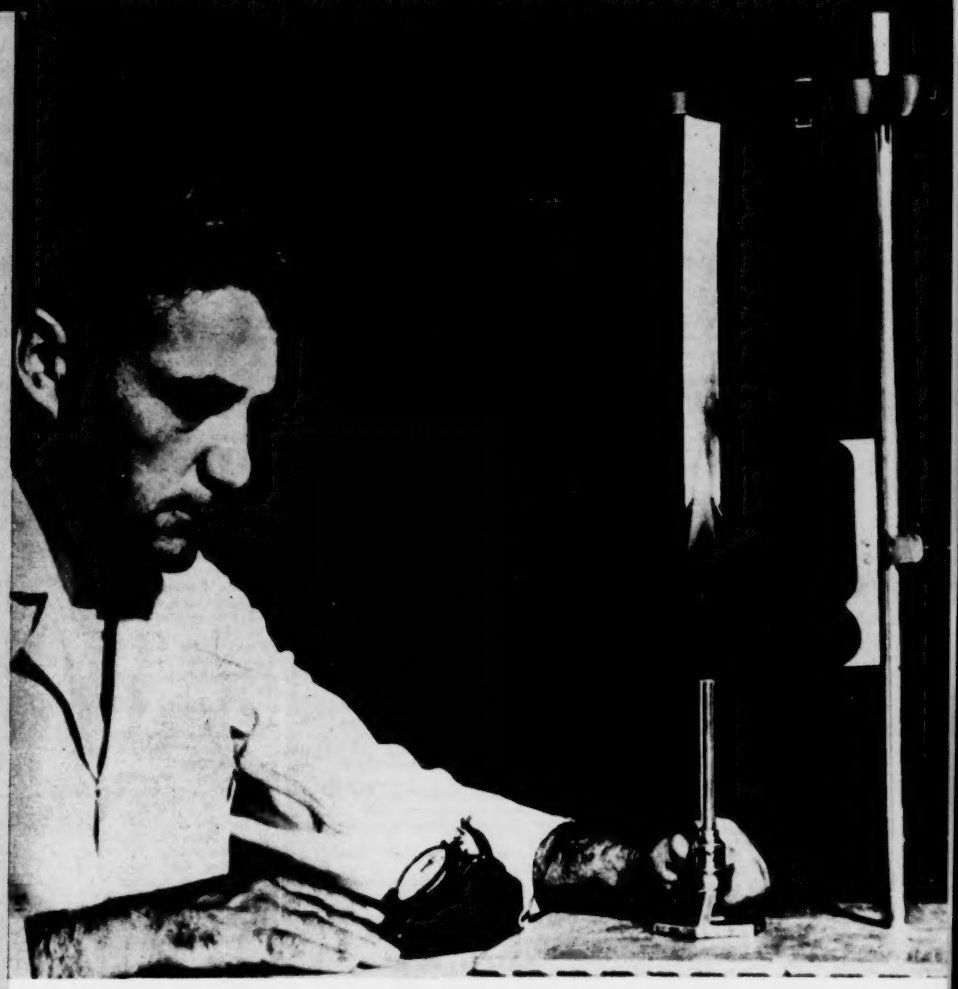
DECEMBER 1953
In Two Parts—Part 1

News Magazine of the American Standards Association, Incorporated



HOW FLAME RESISTANT ARE PLASTICS?

International Committee At Work

"Flammability" is only one of the tests being studied by Technical Committee 61 on Plastics of the International Organization for Standardization. Uniformity of national standards is committee's goal.

PAGE 361

American Standards Association, Inc

Officers

ROGER E. GAY, President
EDWARD T. GUSHEE, Vice-President
R. M. GATES, Chairman, Executive Committee
VICE ADMIRAL G. F. HUSSEY, JR, USN (Ret), Managing Director and Secretary
CYRIL AINSWORTH, Tech Director and Asst Secy

Board of Directors

DR W. R. G. BAKER, Vice-President & General Manager, Electronics Div, General Electric Co—Radio-Television Mfrs Assn
LEO V. BODINE, Executive Vice-President, Nat Lumber Mfrs Assn
R. D. BONNEY, Vice-President, Congoleum-Nairn, Inc—Amer Soc for Testing Materials
W. F. BROWN, Safety Director, Consolidated Edison Co of N. Y., Inc—National Safety Council
C. W. BRYAN, Jr, President, Pullman-Standard Car Mfg Co—Amer Soc of Civil Engrs
MISS ARDENIA CHAPMAN, Dean, Coll of Home Economics, Drexel Inst of Technology—Amer Home Economics Assn
WILLARD T. CHEVALIER, Executive Vice-President McGraw-Hill Publishing Co—Member-at-Large
L. S. COREY, President and General Manager, Utah Construction Co—Member-at-Large
J. L. CRANWELL, Vice-Pesident-New York, The Pennsylvania Railroad Co—Assn of Amer RR
G. A. DELANEY, Chief Engr, Pontiac Motor Div, General Motors Corp—Soc of Automotive Engrs
E. H. EACKER, President, Boston Consolidated Gas Co—Amer Gas Assn
R. M. GATES, President, Air Preheater Corp—Amer Soc of Mech Engrs
*ROGER E. GAY, President, The Bristol Brass Corporation—Copper and Brass Research Assn—President, ASA
*EDWARD T. GUSHEE, Vice-President, The Detroit Edison Co—Vice-President, ASA
C. E. HODGES, President, Amer Mutual Liability Ins Co—Nat Assn of Mutual Casualty Cos
*T. D. JOLLY, Vice-President, Aluminum Co of Amer—Past President, ASA
R. OAKLEY KENNEDY, Formerly Vice-President, Cluett, Peabody & Co, Inc—Member-at-Large
J. H. McELHINNEY, Vice-President, Wheeling Steel Corp—Amer Iron and Steel Inst
H. S. SIZER, Director of Design, Machine Tools, Brown & Sharpe Mfg Co—Nat Machine Tool Bldrs Assn
HOYT P. STEELE, Executive Vice-President, Benjamin Elec Mfg Co—Nat Elec Mfrs Assn
J. R. TOWNSEND, Director, Materials and Standards Engrg, Sandia Corp—Chairman, ASA Standards Council
W. C. WAGNER, Philadelphia Elec Co—Past Chairman, ASA Standards Council

*Members of Executive Committee

Standards Council

J. R. TOWNSEND, Director, Materials and Standards Engrg, Sandia Corp, Chairman
A. S. JOHNSON, Vice-President and Manager, Engrg Dept, Amer Mutual Liability Ins Co, Boston, Mass., Vice Chairman

Chairmen of Standards Boards

CHEMICAL INDUSTRY—J. G. Henderson, Carbide and Carbon Chemicals Co, Div of Union Carbide and Carbon Corp, South Charleston, W. Va.
CONSTRUCTION—Morgan Strong, Executive Secretary, Conference of Mayors and Other Municipal Officials of the State of New York, Albany, N. Y.
CONSUMER—Richard S. Burke, Manager, Merchandise Testing and Development Labs, Dept 817, Sears, Roebuck and Co, Chicago, Illinois
ELECTRICAL—C. R. Harte, New Haven, Conn
GRAPHIC—H. P. Westman, Editor, Electrical Communications, International Telephone and Telegraph Corporation, New York, N. Y.
HIGHWAY—S. J. Williams, Assistant to President, Nat Safety Council, Chicago, Ill.
MECHANICAL—F. T. Ward, Wilton, Conn
MINING—M. D. Cooper, Director, Mining Engrg Education, Nat Coal Assn, Pittsburgh, Pa.
MISCELLANEOUS—G. H. Harnden, Standards Service Dept, Gen Elec Co, Schenectady, N. Y.
PHOTOGRAPHIC—Paul Arnold, Ansco, Div of General Aniline & Film Corp, Binghamton, N. Y.
SAFETY—Edward R. Granniss, Manager of the Loss, Prevention and Engrg Dept, Royal Liverpool Insurance Group, New York, N. Y.

ASA Member-Bodies

Air Conditioning & Refrigeration Institute
Aluminum Assn
Amer Gas Assn
Amer Home Economics Assn
Amer Inst of Chem Engrs
Amer Inst of Elec Engrs
Amer Iron & Steel Inst
Amer Ladder Inst
Amer Petroleum Inst
Amer Railway Car Inst
Amer Soc of Civil Engrs
Amer Soc of Mech Engrs
Amer Soc for Testing Materials
Amer Soc of Tool Engrs, Inc
Amer Water Works Assn
Anti-Friction Bearing Mfrs Assn, Inc
Associated Gen Contractors of Amer, Inc
Assn of Amer Railroads
Assn of Casualty and Surety Cos, Accident Prev Dept
Automobile Mfrs Assn
Cast Iron Pipe Research Assn
Conveyor Equipment Mfrs Assn
Copper & Brass Research Assn
Diesel Engine Mfrs Assn
Elec Light and Power Group:
  Assn of Edison Illum Cos
  Edison Elec Inst
Fire Protection Group:
  Associated Factory Mutual Fire Ins Cos
  Nat Bd of Fire Underwriters
  Nat Fire Protection Assn
  Underwriters' Labs, Inc
Gas Appliance Mfrs Assn
Grinding Wheel Inst
Gypsum Assn
Heating, Piping and Air Conditioning Contractors Nat Assn
Industrial Fasteners Inst
Inst of Radio Engrs
Mfrs Stdzn Soc of the Valve and Fittings Industry
Metal Cutting Tool Inst
Motion Picture Research Council, Inc
Nat Aircraft Stds Com
Nat Assn of Hosiery Mfrs
Nat Assn of Mutual Casualty Cos
Nat Assn of Plumbing Contractors
Nat Assn of Purchasing Agents
Nat Elec Mfrs Assn
Nat Lumber Mfrs Assn
Nat Machine Tool Builders' Assn
Nat Office Management Assn
Nat Retail Dry Goods Assn
Nat Safety Council
Outdoor Advertising Assn of Amer, Inc
Oxychloride Cement Assn
Photographic Mfrs Group:
  Ansco Div of Gen Aniline & Film Corp
  Eastman Kodak Co
Portland Cement Assn
Radio-Electronics-Television Mfrs Assn
Scientific Apparatus Makers Assn
Soc of Automotive Engrs, Inc
Soc of Motion Picture and Television Engrs
Structural Clay Products Inst
Synthetic Organic Chem Mfrs Assn of the U. S.
Telephone Group:
  Bell Tel System
  U.S. Independent Tel Assn
U.S. Machine, Cap, Wood and Tapping Screw Bureau:
  Machine Screw Nut Bur
  Socket Screw Products Bur
  Tubular and Split Rivet Council

Associate Members

Acoustical Soc of Amer
Amer Assn of Textile Chemists and Colorists
Amer Gear Mfrs Assn
Amer Hotel Assn
Amer Inst of Architects
Amer Inst of Laundering
Amer Ordnance Assn
Amer Soc of Bakery Engrs
Amer Soc of Heating & Ventilating Engrs
Amer Soc of Lubrication Engrs
Amer Soc of Refrigerating Engrs
Amer Trucking Assns, Inc
Amer Welding Soc
Assn of Iron and Steel Engrs
Assn of Roller and Silent Chain Mfrs
Certified Ballast Mfrs
Compressed Gas Assn, Inc
Douglas Fir Plywood Assn
Heat Exchange Inst
Illum Engrg Soc
Indiana Limestone Inst
Indust Safety Equip Assn, Inc
Institute of Industrial Launderers, Inc
Instrument Soc of Amer
Insulated Power Cable Engrs Assn
Insulation Board Inst
Internat Acetylene Assn
Marble Inst of Amer, Inc
Metal Lath Mfrs Assn
Nat Assn of Finishers of Textile Fabrics
Nat Concrete Masonry Assn
Nat Elevator Mfg Industry, Inc
Nat Lime Assn
Nat Restaurant Assn
Nat Screw Machine Products Assn
Nat Tool and Die Mfrs Assn
Photographic Soc of Amer, Inc
Pipe Fabrication Inst
Soc for the Advancement of Management
Soc of Naval Architects and Marine Engrs
Spring Washer Inst
Steel Window Inst
Textile Color Card Assn of the U.S., Inc
Veneer Assn

Company Members—More than 2300 companies hold membership either directly or by group arrangement through their respective trade associations.

Marginal Notes

Contemporary Standards—

On occasion, a discussion of standards comes to our attention that is so sharply to the point that we find ourselves impelled to present it to our readers. This is the case with Mr Binney's address on "Contemporary Standards" (page 356). Although Mr Binney speaks from the viewpoint of the United Kingdom, most of the problems he discusses and the principles on which he bases his solutions are also closely applicable to those of standardizing groups in this country. A reading of this article should help in understanding our own standardization developments.

Industry-Wide Safety—

Safeguards covering the most widely used equipment in industry have been agreed upon by a consensus of national groups (page 362). The vital importance of this consensus to manufacturers of industrial machinery, manufacturers of safety equipment, and employers and employees who are to be protected, lies to a large extent in the possibility of nationwide uniformity of safety practices. Cyril Ainsworth, Technical Director of ASA, has commented:—

> "Guarding of machinery at the source of manufacture has lagged because of lack of uniformity in nationwide requirements. Incorporation of guards at the design stage, made increasingly possible as local regulations are brought into conformity with the American Standard code, has these advantages—it results in better design, and in lower costs of guard installation; and it enables purchasers of equipment to specify compliance with code requirements in purchase specifications."

"Through History With Standards"—

Those entertaining cartoons, published in STANDARDIZATION at intervals during the past year and a half, have now been collected and published as a bound booklet. They form an amusing and interesting little companion piece to "The Strange Case of the Seven-Sided

Post Hole." One copy is yours for the asking—no charge. If you would like more, to pass around to your friends, or to amuse and educate the small fry, ASA will be glad to quote prices.

STANDARDIZATION, 1954—

Starting with the January 1954 issue—which will be a special issue devoted to the National Standardization Conference—STANDARDIZATION is offering a new feature. This is a monthly column of impressions and comments from an over-all view of standards in action. The commentator is Dr Leo B. Moore, assistant professor of industrial management, Massachusetts Institute of Technology. Dr Moore presents one of the few regular college courses on standardization. His course is a full-term subject in the Department of Business and Engineering Administration at MIT.

Before Dr Moore started his class, in 1950, he spent several years interviewing companies and individuals throughout the country to acquire a well-rounded background. He is still gaining a wide and growing knowledge of standardization-in-action from his contacts and interviews with standardization executives. His thinking has been sharpened and viewpoint crystallized by the questions and comments of his students. Dr Moore has a lot to say as a result of this unique experience and his active observer status. Because we are sure you will find Dr Moore's ideas stimulating, we have given him an opportunity to present his comments in STANDARDIZATION.

Other regular features of STANDARDIZATION are continuing in 1954. The series on Government standards by S. P. Kaidanovsky; the question and answer column; the reports on status of American Standards; the Personality of the Month—these will all be better than ever if our efforts bear fruit as we hope.

●

Our Front Cover Photo Courtesy Morrison-Gottlieb

Opinions expressed by authors in STANDARDIZATION *are not necessarily those of the American Standards Association.*

Standardization

Formerly Industrial Standardization

ASA

Reg. U. S. Pat. Off.

Published Monthly by American Standards Association, Incorporated

70 E. 45th St, N. Y. 17, N. Y. President: Roger E. Gay

EDITOR: RUTH E. MASON PRODUCTION EDITOR: MARIE McDONNELL

DECEMBER, 1953 VOL 24, No. 12

In Two Parts—Part I

Featured

The Contemporary Role of Industrial Standards. *By H. A. Binney* ... 356

International Proposals for Testing Plastics. *By G. M. Kline* ... 361

Up-to-Date Safety for Power Transmission. *By E. R. Rath* ... 362

Detroit Tap "Standardizes" Specials. *By S. B. Hellstrom* ... 364

This Month's Standards Personality—Irwin D. Wolf ... 367

What Is Your Question? ... 367

Government Standards. No. 4—Standardization in the State of Connecticut. *By S. P. Kaidanovsky* 369

News

States Use Ladder Code ... 363

Wolf Urges Retailers to "Engineer" Buying ... 367

Ainsworth Presents Safety Awards to Railroads (*Picture Story*) ... 368

Japanese Society Honors Dr Deming ... 368

Data on Bearings Available ... 368

Standards from Other Countries ... 373

Announcing New Books ... 374

ASTM Acts on Standards ... 379

American Standards Activities

American Standards (Status as of November 11) ... 375

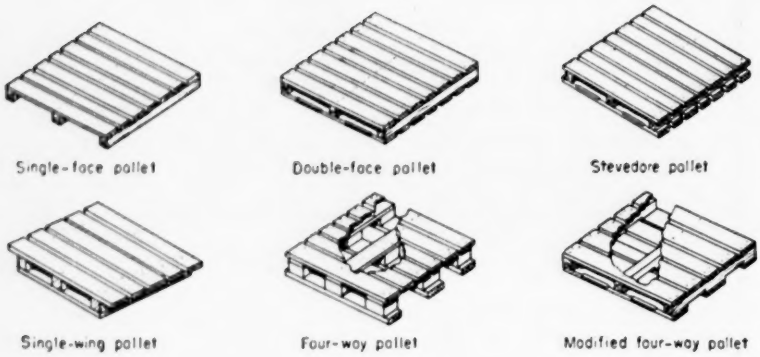
What's New on American Standard Projects ... 377

Part 2—Index, Volume 24, January-December 1953

Standardization is dynamic, not static. It means not to stand still, but to move forward together.

Single copy 35¢. $4.00 per year (foreign $5.00). Schools and libraries $3.00 (foreign $4.00). This publication is indexed in the Engineering Index and the Industrial Arts Index. Re-entered as second class matter Jan. 11, 1949, at the P.O., New York, N. Y., under the Act of March 3, 1879.

THE CONTEMPORARY ROLE OF

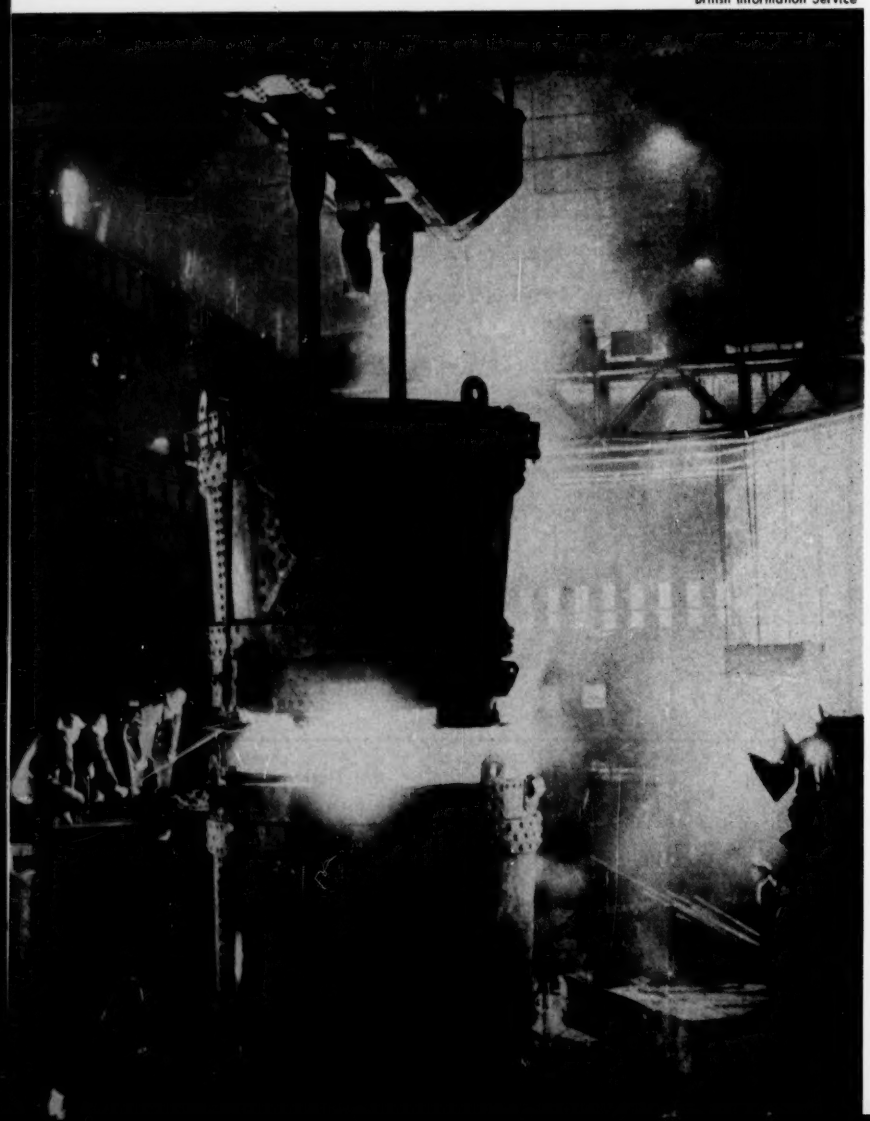


Pallet Sales Corp

Some of the types of pallets for which standard sizes and specifications may be set up through an international project, thus reducing handling and shipping costs.

Pouring giant 200-ton ingot at Sheffield. ". . . 95 percent of steel produced in this country is made and sold in accordance with British Standards."—H. A. Binney.

British Information Service



BEFORE this audience I need hardly spend time in combating the myth that "standardization" (that much misused word) leads to uniformity and mediocrity and applies a brake to enterprise and invention. It is surely self-evident that applied standards have played an enormous part in that improvement of living standards and comfort which modern industrialized communities enjoy over those of earlier times.

On the other hand, I shall not ask you to take it for granted that the development and application of industrial standards is necessarily a good thing in every case. That they can be shown to be so over wide areas of technology and production is certainly true; but in directing the present rapid expansion of the BSI's work, I hold firmly to the view that the timing must be right and that the need must be proved in each individual case.

First let me establish a point which is well understood in many spheres but appears to be only vaguely comprehended by a few branches of industry and trade which have recently come into contact with the BSI—this is that the BSI is primarily a co-ordinating body. Our job is to provide an independent forum within which those who want industrial standards—and equally any who do not want them—can come and hammer out their arguments in the presence of adequate representation of all the industrial, professional, and commercial circles who may be affected by the final decision—whatever it is.

That is not to say that our service is limited to the provision of a room and a table round which the protagonists can sit—though, to be sure, there are times when getting even that much accepted might be no minor achievement! What we provide is an adequate technological appreciation of the problems involved, a practical service of fact-finding in relation to those problems and—above all—a great wealth of

INDUSTRIAL STANDARDS

by H. A. R. Binney, C. B.

experience in negotiation and in the art of informed compromise.

BSI officials may not and will not adopt partisan roles. Our job is to hold the ring, to see that everybody gets a fair shout and a fair hearing. At the same time we are intent on seeing that business is conducted with due celerity, that decisions are reached with the minimum expenditure of time and that, as far as we can help towards it, the decisions are the best. Standards do not come just from putting everybody's ideas into a pot, shaking it around and coming up with an average.

What is the present pattern of standards work? A very large part still concerns the basic materials of production and construction. Through the combined efforts of producers and users of these materials, precise and well-tried specifications for many hundreds of raw and processed materials, used in thousands of factories and constructional projects, have been embodied in British Standards.

I could quote scores of examples, but let me take only one. A buyer of processed steel, whether he wants it for building a railway bridge or a bicycle frame or a television set, or for any of a thousand other common purposes, can turn to a British Standard; there he will find a clear and exact specification for the properties of steel section, tube, or sheet which will most economically and satisfactorily perform the function required.

And it is not merely true that the buyer *can* enlist this safeguard. It is a reliable estimate that not less than 95 percent of the steel produced in this country is made and sold in accordance with British Standards. The precise documentation of stresses, load capacities, machining conditions, and other essential technical facts so given is of great help to designers, manufacturers, and executives, and it clearly represents an enormous saving of time and cost at the most valuable creative levels of work.

And here I should note the important spur to competition provided—and the freedom from restrictive attitudes evidenced—by a recognized and open, published specification. Authoritative and open standards are the very essence of competition.

All this can be said of a vast range of materials, and for these it is perhaps interesting to record that much recent work in the revision of specifications undertaken to meet the stress of shortages of material is proving valid now that there is an improvement, even if only a temporary one, in the supply position of those materials.

From materials the work branches out into components, and often complete equipment, made by and used in the different industries of the country. The emphasis in particular cases can vary: dimensional features to secure interchangeability of parts; construction and performance factors concerned with safety (as in acceptance tests for boilers, construction features of cranes and other lifting tackle, signalling apparatus, safety glass, and so on); the settlement of performance ratings (for example, for agricultural tractors) to assist purchasers and sellers; and even the standardization of parts and of markings for blood transfusion equipment and anesthetists' apparatus.

To mention one of the most commonsense instances of latter-day standards, I have been interested in a recent effort by the chemical industry and their customers to reduce to simple and usable words the polysyllabic and often unpronounceable technical terms used to define the chemical compounds employed in pest control. In the new shorthand language that has been devised "ferric dimethyldithio-carbamate" becomes simply "Ferbam," which seems much more suitable for market gardeners and farmers, to say nothing of ordinary mortals like myself.

The field of BSI work is as wide as that of British industry itself. As a rough comparison it is right to say that about 60 percent of it is directed to the engineering and metals trades, about 30 percent to chemicals and building together, and the remaining ten percent to textiles and other industries and trades. Some indication of its impact on British industry and trade can be gaged from the fact that the sales of British Standard Specifications are now approaching the rate of one million a year.

What are the directions in which this work is of special significance today? I think this might profitably be viewed, even if only briefly, under three main headings: first, productivity and exports; second, defense; and third, consumer goods and guarantees of quality for the man or woman in the street. The first two are vital to our whole future; the third is in a different category and while, in my view, it has sometimes been given undue prominence, it still

---

Mr Binney is director of the British Standards Institution. In this paper, presented at a meeting of the Royal Society of Arts, March 18, 1953, he gives a picture of today's standards work and its trends as he sees them, as well as the impact of standardization on Britain's national economy. In his opening remarks Mr Binney mentioned the Golden Jubilee of the Institution, held in 1951 to celebrate organization of the Institution as the Engineering Standards Committee. As he says, "The Committee not only pioneered the idea of voluntary standards, but also laid down the principles which have since served as a model for many of the 30-odd national standards bodies now existing throughout the industrial world."

Reprinted by permission of the Royal Society of Arts, this paper appeared in the September 4 issue of the Society's *Journal*.

has, within proper limits, its importance and interest.

Standards and Productivity

The present economic situation of this country and Western Europe has accentuated the need to increase productivity by all and every means. Everyone is familiar with the studies of American industries which have been made in recent years. Whatever we may individually think of these studies, and of the applicability of American methods in this country—and I for one believe that we must *adapt* them to our needs rather than *adopt* them wholesale—it is at any rate significant that nearly all the productivity reports on a score or more of different industries recommend the more extensive use of standardization techniques in this country as a prime source of cost economy and hence of manufacturing efficiency and competitive power. There can, indeed, be little argument in these days against the proposition that the "three S's"—standardization, simplification, and specialization—together provide one of the readiest means of achieving that all-round increase in output per man- and machine-hour which alone will preserve our export levels and improve our national standards of living.

One of the Anglo-American Productivity Council Reports dealt specifically with the use and effect of standardization techniques in American industry, and its main conclusion was graphically summarized by Mr William L. Batt, whom many will remember for his work as vice-chairman of the wartime Combined Production and Resources Board of Britain, Canada, and the United States and more recently as the London representative of the United States Mutual Security Agency and the NATO Defense Production Board. This is what Mr Batt had to say: "No one who reads this report can fail to realize all over again that lack of standardization of products and material specifications is responsible for much of Europe's low level of output per worker. Here is the main reason why a European worker must spend a month's wages to buy a bicycle which an American worker can buy with two or three days' pay."

To my mind the most significant feature of American techniques is that they are based on a general understanding and acceptance of sensible standardization as part of what may be called their "cost-conscious psychology." American business men, on their own record and usage, want the best possible ratio between price and quality; they expect a manufacturer to snatch every advantage from standardization of parts, and simplification of ranges, to achieve the best ratio. To compete in the United States, therefore, and with the United States, there is a need to acquire something of this habit of mind. The kind of advantages which can accrue will be familiar to you—economy of raw materials (a vital factor in this country's economic situation), simpler and more effective quality control, easier replacement and maintenance, reduction of stores lists, simplification of correspondence and quotation, economy of design work.

The BSI "Kite" Mark

This last economy is worth special attention. By specifying standard parts and fittings, the time of designers, draftsmen and other creative personnel, who represent one of our most scarce and valuable assets, can be saved for better purposes.

As an illustration of this last statement I quote the case of a very prominent firm who manufacture certain types of industrial electrical equipment. This firm told us recently that, although they already employ more than 200 draftsmen, they would need at least 50 more but for the fact that so many components to standard specifications can be used. It is much easier and quicker to draw in a block and mark it "Circuit-breaker type so-and-so, to British Standard No. So-and-so" than it is to devise and draw the complete component. The subsequent buying and installation operations are equally simplified; and this one example can be multiplied a thousand times every day.

Not that I would claim that standardization offers a panacea for every productivity problem. But I do assert that its benefits to a country faced with our output problem are of crucial importance.

Standards and Export Trade

Nor can we, in my view, afford to "write off" the argument for the further use of standards on grounds of the need for flexibility, of avoidance of rigidity in the interests of further research, or of the specialized demands of certain export customers—valid as these considerations may be in particular cases.

I would like to quote here from a recent and authoritative paper presented to the Institution of Electrical Engineers. This paper made it very clear that the electrical industry fully endorses the principle of creating standards, and went on to say: "In 1938 the electrical manufacturing industry [of this country] became the largest exporter of electrical goods in the world, and ten years later, in 1948, it had doubled the quantity exported in 1938. That result could not have been achieved without the standardization already effected, but much more will be possible with still more standardization."

It is frequently found that a guarantee of conformity to an established British Standard is all that the overseas buyer needs by way of assurance that the material or commodity concerned will meet his requirements. In other words, British Standards are part of the regular language of commerce and often the precise terms of contract.

But as in recent years the importance of standards to our overseas trade has grown, so has the tendency for individual nations to develop standards of their own. There are obvious dangers, as well as advantages, in the large-scale development of national standards by many countries, unless there is close co-operation in that development.

In earlier times, when the United Kingdom had a clear lead in engineering exports, standard British materials and components were widely accepted abroad—even despite the use of the metric system in Continental countries. In those days a British manufacturer could be content to seek export markets with his standard domestic products. But this convenient state of affairs changed with rising competition from other countries, and especially with the increasing need, as technology advanced, for accuracy of definition.

It is essential that standards set up in other countries should not constitute, as they could so easily do, a barrier to our exports as formidable as a new tariff, or a policy of import restrictions. For these reasons there has in recent years been a marked increase in the activity of the BSI at the international standards level.

Active participation by the BSI in the work of the International Organization for Standardization (more easily known as ISO), of the International Electrotechnical Commission, and in related work under the aegis of the Organization for European Economic Cooperation contributes to our own export objectives, as well as to the more general ones of expanding international trade by promoting the interchangeability of goods, equipment, and machinery, the speeding up of transport through standard handling apparatus, and the like. A useful example of work in this last field was the recent agreement on a project to develop standard sizes and specifications for "pallets"—for the movement of goods by fork-lift truck and other means. It has been estimated by one of our biggest overseas trading concerns that with older methods of transit and shipment a given load may have to be broken down and reassembled no fewer than twenty times between an inland factory in this country and an inland customer in Italy. But that same load, if mounted on one of the standard international pallets could pass from a despatch department here, and thence by road, rail, and sea transport right to its ultimate destination—without being broken down a single time on the whole journey. Under these ideal conditions the savings in time and cost, and the reduction in the risk of loss or damage, are too obvious to need stressing.

I emphasize these international aspects because of their extreme importance to this country and also because of the new impetus and emphasis which international work has taken on since the war.

Standards in Defense

I turn now to the subject of defense, and in particular the contribution which standardization can make to the co-ordinated activities of Britain, the United States, Canada, and the other NATO powers. The almost complete absence of basic common standards for language, weapons, equipment, training, and procedure is a serious handicap affecting the entire Atlantic Defense Community, and much thought is being devoted to a solution of this problem.

It has been reliably stated that the lack of engineering standards between Britain, the Commonwealth countries, and America delayed the building up of our strength and consequently prolonged the late war by at least 12 months. I can well believe it. Lack of uniformity in screw threads alone is said to have cost the Allies a thousand million dollars, and when the Rolls Royce Merlin engine was to be produced in America six vital months were lost while drawings were being translated into American practice. Many other equally startling examples have been given from time to time by responsible spokesmen.

Since the war strenuous efforts have been made to put some of these things right. A system of unified screw threads has been agreed and standards published in America, Britain, and Canada (the "ABC" countries as they are called). This major achievement has been followed up by discussions on other aspects of basic engineering practice. In recent months we have gone a long way towards agreeing the basis of a common system of Limits and Fits, and before the year is out we may be able to record a similar achievement in that most difficult of all subjects, engineering drawing practice.

Speaking of this last subject I must crave your indulgence if I quote Mr William L. Batt once more. Addressing recently an influential gathering in New York he said: "The standardization of engineering drawing practice in America, Britain, and Canada is probably the most important single step these three democracies could take to make better use of their combined resources . . . . There is no commercial advantage to be gained by a country in protecting its drawing practice."

Discussions are also proceeding among the "ABC" countries concerning particular types of screw threads not covered by the present agreement. Later it is hoped to tackle some of the other fundamental engineering practices, and the importance of agreement in this field needs no more emphasis from me. Clearly there are wide opportunities for fruitful co-operation between the "ABC" countries and among the others of the free world—co-operation which, though it starts from the point of view of defense, can have very much wider economic significance.

Similar work is proceeding in the service of the humanities. A program has recently been started for the standardization of medical equipment among NATO countries. When it is finished, a British stretcher will fit the trolleys of an American ambulance and, say, a Turkish needle will fit a French syringe. Last year we entertained in the BSI Council Room a 12-nation conference, organized by ISO, to seek the standardization of blood transfusion

equipment. Good progress was made, and it is hoped finally to achieve a sufficient degree of interchangeability to ensure that the use of this life-saving technique will no longer be handicapped by differences in the equipment made in different countries.

Before leaving this wide subject of international standards co-operation I should perhaps remind you that there is also the problem of keeping in line the technical writing and speaking practices of the English-speaking countries. When I have attended international conferences, my delegation has often been tempted to ask for papers by the United States delegation to be translated into English, and I dare say they have felt the same about ours. There are plenty of jokes going round about trans-Atlantic misunderstandings. For example when we "table" a document we confidently hope that it will receive some consideration by interested parties. But in America to table a document means to put it away. It is obviously a much more serious matter if technical terms in industry become substantially out of line and in the BSI we are giving this problem the attention it deserves. We have agreed with our colleagues in the American Standards Association to work closely together so that where existing terms differ we can harmonize them as far as possible, and at the same time try to ensure that we keep in step in the development of new technical terms. As is well-known, many British Standards include the definition of terms used in connection with the subject matter, and these definitions will be one of the first things we look at again in our efforts to "standardize" Anglo-American terminology.

Standards and the Consumer

The technique of evolving voluntarily and mutually agreed standards to suit alike the buyer and seller of goods or services has developed, and continues to develop, wherever knowledgeable seller is in contact with knowledgeable buyer—as, for example, in the sale of semi-manufactured materials to a producer of finished goods. At this level *caveat emptor* has long lost its sinister significance. When, however, the finished goods reach the consumer—the housewife or the typist buying linen or underwear, the business man buying his socks or painting the bathroom—does this still remain true? This is a matter which has occupied considerable space in the press and in Parliamentary reports during the past year and there can be no argument that we all have to buy a very wide variety of commodities, of which we are unable to assess the quality or value.

It is for this reason that the BSI was invited by the Government to collaborate with the industries producing goods formerly covered by the Utility scheme in the preparation of quality standards for the same classes of goods. This project is by no means a simple matter of taking over Utility specifications lock, stock, and barrel and writing them up as British Standards. The Utility specifications had, according to general view, become outmoded. They could satisfactorily be replaced only by much more flexibly drawn standards of quality. To accomplish this, in some very difficult fields, needs patience as well as ingenuity. Much effort has been expended, but results in a good many cases are still awaited.

The BSI system of certification marking whereby one of our registered trade marks—notably what is popularly called the "Kite" mark—may be applied to goods complying with British Standards, has been in operation for many years for the benefit of producers and users of many types of capital goods and what are called "durable consumer" goods. Until recently, however, it applied to a very small number of the goods purchased by the ordinary shopper. But with the development of standards in the field formerly occupied by Utility, there came the realization of a demand by the general public for some independent assurance that, where they lacked the knowledge or ability to judge for themselves, the goods were in fact up to the standard.

The first of these new "independent quality" marking schemes was launched some months ago and is working well. It applies to bedding, where so much that may affect quality and hygiene is necessarily out of sight. The public can now be satisfied that mattresses and the like bearing the "Kite" mark are quality goods. In a few weeks . . . the first "Kite" marked furniture will start to flow to the shops.

There is, of course, a considerable range of commodities where established brands of deservedly high repute give all the assurance needed. The discriminating buyer also knows the reputation of particular shops. But not all goods by a long way are branded; not all branded products are necessarily good; and many branded goods tend to be too costly for a large section of the population. There appears to be a genuine need, there certainly is a vocal demand, for an independent "brand", such as the "Kite" mark can provide.

The recent controversy on the subject of quality standards for textile goods must have been noticed by many people. In discussing this "post-Utility" responsibility which my Institution was asked to assume, I have used — deliberately — the words "voluntary" and "mutually agreed." They and all that they connote lie at the very root of the matter—though they have been ignored or conveniently forgotten by some of the protagonists in the recent argument. No industry is compelled to adopt quality standards or a marking scheme; no individual producer in an industry which decides to support that policy need regard himself as bound by it. On the standards front this is still a free country; all I would add is, "Why not let the consumer decide?"

The standards for "Kite"-marked furniture to which I referred earlier have a special interest and may well be the forerunner of a new class of standards for consumer goods. There were some difficult problems; not least the perennial problem of assessing just *where* to draw the line between what is adequate quality and what is not, and *how* to draw that line. In an industry like the furniture industry, any serious limi-

(*Continued on page* 379)

Delegates at the third meeting of ISO Technical Committee 61 on Plastics at Stockholm, August, 10-14, 1953.

International Proposals for Testing Plastics

by G. M. Kline

Chief, Organic and Fibrous Materials Division, National Bureau of Standards

SIX draft proposals of testing methods to be recommended for use in international trade were approved this summer at a meeting of Technical Committee 61 on Plastics, International Organization for Standardization. The meeting was held in Stockholm, Sweden, August 10 to 14.

The proposed methods of test pertain to the determination of water absorption, apparent densities of molding powders (pourable and nonpourable from a funnel), acetone-soluble matter of phenolic moldings, flexural strength properties, and temperature of deflection under load. These properties are quite commonly included in specifications for molding compounds and plastic materials and were among the first to be covered in the work on standardization of testing methods by ASTM Committees D-9 and D-20. The comparable ASTM Specifications are D 570 for water absorption, D 1182 for apparent density of granular molding powders, D 954 for apparent density of nonpouring molding compounds, D 494 for acetone-soluble matter, D 790 for flexural properties, and D 648 for heat distortion temperature. In a number of cases some modifications of these procedures were introduced into the ISO/TC 61 draft proposals. These will undoubtedly be studied by the ASTM committees to determine the feasibility of having American methods reflect the recommendations of ISO in so far as possible in order to avoid unnecessary testing for purposes of international trade.

Progress was made on the international standardization of test methods for many other properties, of standard laboratory atmospheres and conditioning procedures for use in testing, and of nomenclature and listing of equivalent terms in various languages. Some of the other properties for which the Working Groups of ISO/TC 61 are drafting proposed international methods of test are methanol soluble matter of polystyrene; percentage of free phenol, free ammonia, chlorides, and pH of water extract of phenolic moldings; tensile properties; flammability; impact strength; and flow properties of plastics.

The International Organization for Standardization (ISO) is made up of the national standardization organizations of about 35 countries. It has technical committees working in diverse fields of materials and products. The American Standards Association (ASA) is the Secretariat for ISO/TC 61 on Plastics and, in collaboration with ASTM Committee D-20, is responsible for scheduling and conducting the work of the plastics committee. The draft proposals prepared by ISO/TC 61 are circulated by ASA to the participating member bodies (13 in the case of ISO/TC 61) for consideration. When a draft proposal is approved by a majority of these organizations, it becomes a Draft ISO Recommendation and is submitted to all ISO member bodies for consideration. When it is accepted by a majority of the ISO member bodies and the ISO Council, it becomes an ISO Recommendation; if accepted by all the ISO member bodies, it may become an ISO Standard.

This was the third meeting of ISO/TC 61, the previous meetings having been held in New York in 1951 and in Turin, Italy, in 1952. Dr G. M. Kline was chairman of the meeting and Dr H. Liander, Technical Director of ASEA, Sweden,

Dr Kline was chairman of the ISO/TC 61 meeting at Stockholm, Sweden, August 10-14.

was co-chairman. Twelve countries were represented at the Stockholm meeting with the following number of delegates: Belgium, 3; Denmark, 1; France, 5; Germany, 7; India, 1; Italy, 5; Netherlands, 4; Norway, 1; Sweden, 11; Switzerland, 2; United Kingdom, 9; and United States, 6. Robert Burns, Bell Telephone Laboratories, was leader of the U. S. delegation, which included the following additional members: Dr R. Buchdahl, Plastics Division, Monsanto Chemical Co; Dr F. W. Busse, Polychemicals Department, E. I. du Pont de Nemours and Co, Inc; Dr G. M. Kline, National Bureau of Standards; Dr Ralph Witt, National Electrical Manufacturers Association and Johns Hopkins University; and E. Y. Wolford, Chemical Division Koppers Co, Inc. Mr Wolford also served as secretary.

Arrangements for the meeting were made by the Swedish Standards Association (SIS), Swedish Electrotechnical Commission (SEK), and Swedish Plastics Federation (SPF). A reception for the delegates and their accompanying ladies (100 percent for the U.S. delegation) was held by SIS on August 10. The SPF was host at a dinner and dance on August 13.

The next meeting of ISO/TC 61 will be held either in Philadelphia, Pa., or at some location in England or on the European continent, probably in September 1954. A decision on the time and place will be made by the American Secretariat on the basis of statements of preferences now being obtained from the member bodies of ISO/TC 61.

The importance of international trade in plastics to the American industry calls for continued and increasing participation in the efforts of ISO to provide clearly defined terminology and recommended methods. It is to the interest of the plastics organizations and firms of this country to continue to be represented on delegations as strong as those which have represented the United States at the first three meetings of ISO/TC 61 and to establish working relationships with their counterparts in other countries.

Up-to-date Safety for POWER TRANSMISSION

by E. R. Rath

Executive Vice-President, American Leather Belting Association

SAFETY rules that probably have broader application than any others have just been brought up to date in the American Standard Safety Code for Mechanical Power Transmission Apparatus. The code applies to all moving parts of equipment used in the mechanical transmission of power. These include prime movers, intermediate equipment, and driven machines.

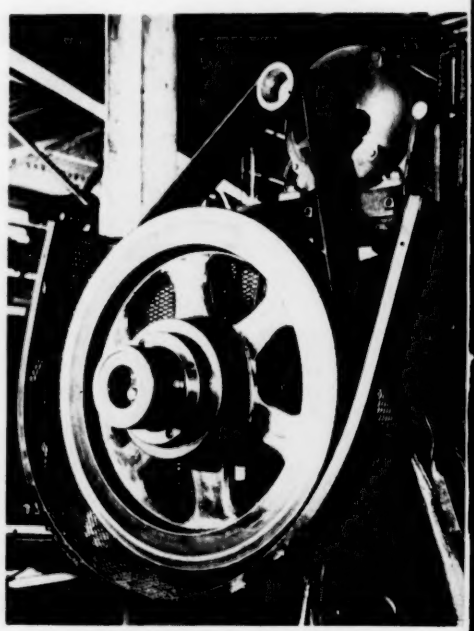
Mechanical power transmission apparatus is required on every machine to transmit to it the power generated by the prime mover, whether steam or gas engine or electric motors. The recently revised American Standard Safety Code for Mechanical Power Transmission Apparatus provides for application of proper safety devices around this drive equipment. Thus it is of importance to every individual in every industrial plant, whether he be employer or employee. Application of the rules prevents accidents that may endanger his life or cause serious injury.

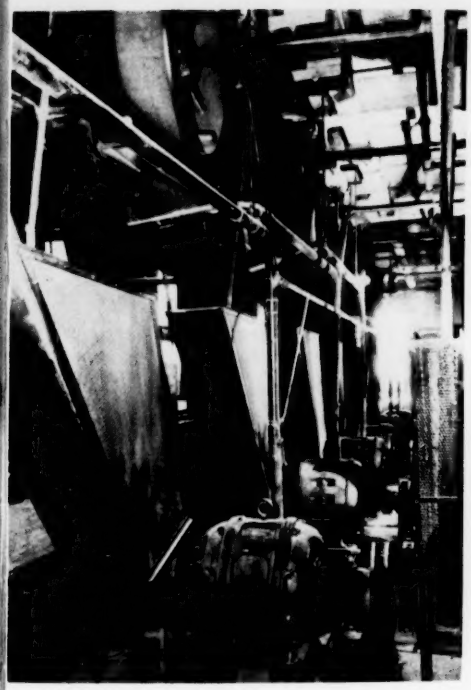
The code as revised provides for safeguarding all revolving and reciprocating parts of equipment used in the transmission of power. Included are belts, pulleys, chains, sprockets, couplings, clutches, or other similar equipment. Also covered are all bolts, keys, set screws, oil cups, and similar projecting attachments to the transmission equipment itself.

At the time the original code was adopted in 1927, V-belts were just coming into use. Because they were so new, no provisions were included in the 1927 edition to cover them. Since then, their use has become quite common. The code as revised now applies to them as well as to other types of belting operating at speeds over 250 fpm. Narrow, flat belts 2 inches or less in width, round belts of small diameter ½ inch or less, and single strands of V-belts of small cross-section when operating at 250 fpm or less are exempt.

The minimum height of guards around fly wheels, belts, chains, ropes, etc, has been increased to 7 feet above the floor or platform levels. Former minimum height requirements ranged from 5 feet to 6 feet dependent upon the distance from the moving parts. The only ex-

Protective guard around driving belt and rim of fly wheel on punch press. When in operation wheel is also guarded in front. Guard was removed to show fly wheel.





Protective guards around main belt drives in linseed oil factory. New provision in revised code covers V-belts.

ceptions to this new 7-foot requirement are the different types of horizontal overhead belt, chain, or rope drives which are themselves more than 7 feet above the floor or platform level.

Other changes concern definitions, dimensions of recommended guard materials, and the rephrasing of certain rules so as to clarify them and make them more easily understood.

Detailed sketches are provided where their use may simplify and further clarify the explanations given. The general dimensions of guards as well as materials from which they are to be constructed are also listed. In preparing the code, the general practice was to make the construction details as complete as possible and at the same time simple and easy to follow.

The need for a national safety code covering selection and application of mechanical power transmission equipment developed about 1925, with post-World War I expansion of industry and an accompanying increase in the use of this equipment. The Association of Casualty and Surety Companies and the International Association of Governmental Labor Officials, in collaboration with the American Society of Mechanical Engineers, accordingly agreed to sponsor the preparation of such a code. Under the procedures of the American Standards Association, a committee consisting of 29 members was established. It included representatives of the sponsoring organizations and of various associations supported by the manufacturers of mechanical power transmission equipment, as well as manufacturers, users, insurance groups, enforcement officials, and independent specialists. This committee reviewed existing codes, studied operating conditions, and ultimately developed rules for the guarding of prime movers, intermediate equipment, and driven machines. These rules were approved by ASA in November 1927 as American Standard Safety Code for Mechanical Power-Transmission Apparatus, ASA B15-1927.

The code was carefully reviewed by the committee in December, 1935, and was reaffirmed without change.

During the spring of 1949, the committee was again called upon to review American Standard B15-1927. After a thorough review and taking into consideration modern trends, a number of revisions were made as described above. The final draft was approved by the International Association of Governmental Labor Officials, the Association of Casualty and Surety Companies, and The American Society of Mechanical Engineers. It was presented to the American Standards Association with recommendation for approval and designation as American Standard. This was granted in April, 1953.

It is expected that the new edition of the Code will serve as a model or guide for the safety codes prepared by the State labor departments and used by their respective Labor Inspection Departments. It will also probably be accepted and used by the different insurance companies in their safety inspection of factories.

STATES USE LADDER CODE

Everyone likes to know that his work is paying dividends. This summer a joint committee of the American Ladder Institute and the Construction Section of the National Safety Council carried out a survey to determine how widely the work for safer use of ladders has taken hold. The survey covered state requirements for ladder safety.

In general, the revised American Standard Safety Code for Portable Wood Ladders, A14.1-1952, has been followed in whole or in part by many state safety departments, the survey showed.

Specifically, 17 states have codes, standards, safety orders, rules, or laws which to some extent, at least, cover ladder safety. Most indicated recognition of or interest in American Standard A14.1. These 17 states are: Alabama; Arizona; California; Florida; Idaho; Illinois; Nebraska; New Jersey; New York; North Dakota; Ohio; Oklahoma; Oregon; Pennsylvania; Rhode Island; West Virginia; and Wisconsin.

Six states have no code that specifically covers ladder safety, but indicated that American Standard A14.1 governs. These are: Colorado; Georgia; Kansas; Maine; Maryland; and Texas.

Five states have no code specifically covering ladder safety but indicated they are interested. A number actually have work under way. These are: Kentucky; Michigan; Montana; New Mexico; and Vermont.

The joint committee is mailing copies of its report to all State Commissions and to others interested in developing uniformity in regulation of ladder safety throughout the United States.

American Standard A14.1 is sponsored by the National Association of Mutual Casualty Companies, the American Society of Safety Engineers, and the American Ladder Institute, under the procedures of the American Standards Association.

Detroit Tap "Standardizes" Specials

From time to time STANDARDIZATION *publishes information concerning the standardization activities of company members of ASA. The very special form of standardization work carried on by the Detroit Tap and Tool Company, a member of ASA for many years, may be of interest to our readers.*

by S. B. Hellstrom

General Manager, Detroit Tap and Tool Company, Detroit, Michigan

IT IS difficult to think of any manufactured product made from metal or plastics that does not have at least one tapped hole. Many have a great number of tapped holes and require that the tapping operation be performed on special multi-operation machines in order to keep the cost within reasonable limits.

The frequency with which tapped holes are encountered is a good indication of the great number of taps used by today's manufacturers. In addition, all plants use taps for maintenance and repair work, expanding the market for taps still further.

Traditionally, tap manufacturers produce a single line of "standard" taps with the idea that this single line can be used for tapping all materials without regard to toughness, abrasiveness, etc. Here, seemingly, is the highest order of standardization—one tap to tap all materials—except, it doesn't work out most efficiently that way. These taps obviously do their best job on one material and perform at lower efficiency on others, or represent a compromise which gives optimum results in no one material.

For the occasional tap user this may not be too serious a problem but where tapping is a production operation the tapped hole must be right every time. Where a tap is working in a material for which it isn't specially suited, its life is shortened and the tap cost per piece produced is higher. Where a large number of taps are used simultaneously in a multiple operation machine, another, and sometimes even more serious factor—excessive machine down time—arises. It's difficult to make a profit when an expensive machine has to be shut down excessively to change tools.

To keep down this non-productive time, tap users demanded special taps that were designed for the material being tapped. With these they got the longer tap life but at a cost considerably above that for standard taps. It took engineering time to design the specials and, since each batch needed special handling through the production process, the manufacturing costs were up, too. Delivery time was another problem. The user either had to anticipate his needs and allow the tap maker sufficient lead time to process the order or he had to get along with general-purpose taps until his order came through. All too often companies found themselves in the latter situation.

S. B. Hellstrom, general manager of Detroit Tap & Tool Co, Detroit, Michigan, since 1930, has been active in the standardization of tools for greater manufacturing efficiency and lower cost for a number of years. He is currently chairman of the Thread Milling Cutter Standardization Committee of the Metal Cutting Tool Institute. Mr Hellstrom has been associated with Detroit Tap since the company was founded and prior to becoming general manager was plant superintendent and in this capacity responsible for the design of many of his company's productive machines. He is, therefore, keenly aware of the benefits to be derived from standardization at both shop and management levels.

To overcome these problems, Detroit Tap & Tool Company developed a more realistic program of standardization by seemingly taking a step in the opposite direction. We studied industry's needs and found that materials most frequently tapped could be classified in just six major categories: Steel and similar tough materials; cast iron; aluminum, magnesium, and their alloys; zinc and other die cast metals; brass; and plastics. Each of these categories calls for slightly different requirements as to tool geometry, heat-treatment, etc, to obtain best performance in tool cost per piece and output per tap.

The engineering and development work that followed produced six standard lines of "Specific" taps, each line identified on the shank as to the type of material for which it is intended. The designation "Standard Specific Taps" is applied to all of these taps since they are regular shelf items though designed to be used on materials within a specific range.

General dimensions of the taps and threads conform to American Standard B5.4-1948, Taps, Cut and Ground Threads. The difference between "Specific" and the so-called general purpose taps lies in heat treatment and in tool geometry such as hook angles, rake angles, and relief angles. These features are not covered in American Standards or any other standards.

Essentially, Detroit Tap's action standardized the specials. We, like other tap manufacturers, had been supplying fairly sizable quantities of special taps to various industries. The farm equipment builders, for

example, ordered special taps to perform operations on cast iron. Some of these builders bought enough taps to make it practical to specify special taps for their work. Our action makes it possible for the smaller users to have the same advantage in using the best taps for the jobs they have to do. It's a simple matter for even a small user to supply his needs by procuring the right "Specific" tap from one of our distributors.

Tap sizes and styles are available as standard in the "Specific" line, as shown in Table I. Since it would be uneconomical to manufacture and stock additional styles and sizes that are seldom needed, conventional general-purpose standard taps or specials, are included in the "Specific" line for a variety of tapping operations.

Let us take the common machine screw tap as an example to show how "Specific" taps have been standardized. The shank of each machine screw tap carries the designation of the material for which it is designed. For example, one is labeled "STEEL," another "ALUMINUM," etc.

All the taps are made of wear-resisting chrome-cobalt high-speed steel, designated as "M-11" and

Shank of each type of "Specific" tap carries designation of material for which it is designed.

available exclusively from Detroit Tap and Tool Co. "Steel" machine screw taps are available in styles for tapping short open holes or blind holes of moderate depth in steel and other materials which are tough rather than brittle or abrasive. Included in such materials are bronzes (except free-cutting grades of bronze or brass) and most grades of stainless steels. These taps are supplied as standard with right-hand American National thread form, and in taper, plug, or bottoming styles, except taps with an optional number of flutes. The latter are standard in plug or bottoming styles only. Tap sizes range from 0 to 14. (Taps for "Steel" are quite similar in design to "general-purpose" standard taps.)

Cast iron being more abrasive than steel and more brittle poses a slightly different tap requirement. "Specific" taps for the harder grades of cast iron commonly encountered are provided with a special flute form and thread relief best suited to tapping such materials and are available in styles for tapping either open or blind holes. These taps also have a special heat treatment for added abrasion resistance and a $2\frac{1}{2}$ thread chamfer, giving them maximum tap life for either open or blind hole tapping. Tap sizes range from 6 through 12.

Although aluminum isn't specially hard or tough, it is abrasive, so "Specific" taps bearing the label "Aluminum" are specially heat treated to provide maximum abrasion resistance. For aluminum, magnesium, and their alloys, "Specific" machine

Table I

"Specific" Tap Sizes and Styles as Standardized by Detroit Tap & Tool Company

	STEEL	CAST IRON	ALUMINUM	ZINC	BRASS	PLASTIC
Hand Taps	¼–1 ½ in.	¼–1 ½ in.	¼–1 in.	S	S	S
Machine Screw	0–14	6–12	0–12	6–10	3–10	6–10
Spiral Pointed	3–14 ¼–½ in.	S	3–12 ¼–½ in.	6–10	S	S
Short Flute Spiral Pointed	3–12 ¼–½ in.	S	S	S	S	S
Spiral Fluted	3–12 ¼–½ in.	S	3–12 ¼–½ in.	S	S	S
Nut Taps	¼–1 in.	S	S	S	S	S
Straight Shank Tapper Taps	¼–1 in.	S	S	S	S	S
Taper Pipe Taps	⅛–2 in.	⅛–2 in.	⅛–2 in.	S	S	S
Straight Pipe Taps	⅛–1 in.	⅛–1 in.	⅛–1 in.	S	S	S
Metric Hand Taps	S	10 mm–18mm	10 mm–18mm	S	S	S
Pulley Taps	S	¼–¾ in.	S	S	S	S

Sizes not shown are considered "specials."
S—limited demand; furnished as "specials" where required, or "Specific" taps designed for other materials may be used.

screw taps are available in tap sizes from 0 to 12. They are standard with right-hand American National thread form and in plug or bottoming styles for tapping of short open holes or blind holes of moderate depth.

A special flute form is provided for best performance when tapping soft brass. This "Specific" version of the standard machine screw taps has steep chamfer angles for either open or blind hole tapping. Supplied with American National thread form, the taps range in size from No. 3 to 10 inclusive.

Die cast zinc and similar highly abrasive metals require a tap with a special flute form designed for efficient cutting action and also need a special heat treatment to give added abrasion resistance. The pitch diameter on these specific taps is also made 0.002-inch larger than on similar taps for other metals to insure proper fit of the screw or bolt in the threaded hole. These taps are marked "O.S." (over-size) in addition to the standard marking. They are standard with right-hand American National thread form and in plug or bottoming styles. Three "popular" sizes are available in the "Specific" machine screw tap line: No. 6, 8, and 10.

Special limit taps are also used for tapping materials such as plastic and bakelite, which are usually abrasive. Here again the taps are given a special heat treatment for added abrasion resistance and longer tap life. Pitch diameter, as for "soft" metals, is 0.002-inch larger than for other "Specific" taps. They also carry the "O.S." mark in addition to the standard markings on the shank. Thread form and sizes are the same as for "Specific" taps used for zinc die castings.

While "Specific" taps are designed for optimum performance when used for the specific material marked on the shank of each individual tap, almost any "Specific" tap for a specific material(with the exception of "O.S." taps) can be used for tapping of other materials. Thus a manufacturer can keep inventories down to the lowest possible level when the majority of his tapping operations are on one kind of material and only an occasional job comes up on some other material. Take the example of the company that does most of its work with steel and occasionally has to tap a few holes in aluminum castings. Instead of stocking aluminum "Specific" taps for a job that comes up rarely and in small volume, this manufacturer would probably use the steel "Specific" tap. Should the frequency of the job increase, however, it would be desirable to use the right "Specific" tap in order to improve tapping efficiency and increase tap life.

Of course, the introduction of "Specific" taps required some revision in thinking on the part of distributors and customers. Both groups were apprehensive about the larger inventories that might be necessary as the result of using "Specific" taps. This concern, as is often the case, wasn't borne out by operating experience.

A manufacturer using a variety of "Specific" taps can predict his tap requirements very much as if he were using a general-purpose line. He can project the life of taps on certain jobs, knowing how many units of each type he must finish in a stated calendar period. Knowing these facts, the manufacturer can stock "Specific" taps for one through six materials without any complications and need not maintain excessive inventories. Since, in general, longer tap life can be expected than with conventional standard taps, total tap requirements over a given period of time are actually less.

The distributor, too, can keep his tap inventories in line by being aware of demand patterns in the territory he serves. He can determine roughly how many steel, cast iron, aluminum, etc, taps will be required and balance his stocks accordingly. He must know his customers to keep his inventory of taps at a proper working level but the same condition would hold true to a considerable extent even if he handled only one type of tap. The merchandising advantage of having just the right tap for the job also has more than offset any possible slight increase in inventories.

Since the use of "Specific" taps yields greater tap life, an actual reduction in inventories is often possible at the manufacturing level. Typical customer case histories show that a manufacturer of truck engines was able to increase his average output per tap by 400 percent on a job requiring the tapping of 3/8-16 NC threads in a cast iron motor block; while an automobile manufacturer had a tap life increase of 200 percent tapping 1/2-20 NF threads in forged steel crankshafts. These "success stories" illustrate the advantage gained by the customer who uses a "Specific" standard tap and purchases it at a price he would ordinarily pay for a general-purpose tool that could not be expected to meet the same performance standards.

Whether in a home workshop or in a giant mass production factory, the all-purpose tool is seldom the best for the job. Certainly no one would expect to see assembly workers on an automotive assembly line using only all-purpose hand tools like pliers and screw drivers. Theoretically, at least, our modern passenger cars *could* be assembled using only such basic tools, but cost and performance-wise they would be less desirable than our present day automobiles that are put together by using a variety of power tools, that are special, yet standard.

With all manufacturers keeping a close watch on costs, combining the best ingredients of specialization with a readily available standard tool where the supplier has absorbed the "special" costs, opens the door to new profit opportunities.

Although we at Detroit Tap applied this principle only to the field of taps, we feel that similar economies and gains in manufacturing efficiency might be applied to other lines. Just as in our case, a study of the market, followed by engineering and development work would be required to "standardize the variables." The net result of more goods produced at lower cost would certainly make additional steps toward "realistic standardization" worthwhile.

WOLF URGES RETAILERS TO "ENGINEER" BUYING

"Engineered buying" is the answer to most of the problems that retail stores face in the post-defense period, Irwin D. Wolf told the Smaller Stores Division of the National Retail Dry Goods Association at their fall meeting September 15.

Mr Wolf is general manager of Kaufman's, Pittsburgh, vice-president of the May Department Stores, and chairman of the Executive Committee of the Board of Directors of NRDGA.

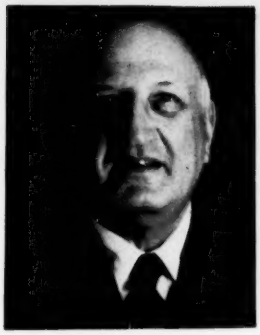
The scientific method of retailing, or in Mr Wolf's words, "engineered buying," is needed to prevent inventory troubles, earn better markup, reduce returns and complaints, stimulate the development of new merchandise, and move more goods into the hands of more people, he said.

Mr Wolf explained:

"This is buying . . . that is factually thought out well in advance, carefully studied in the light of consumer needs and wants, and placed as far in advance as possible so that the manufacturer may not only have ample time for delivery when the merchandise is needed but year-round production as well.

"I believe that the proper selection of merchandise, its sizing, the specifications surrounding the buying function, are based too much on guess work, personal preferences, and opinion. In engineered buying—in the application of science and substitution of the scientific estimate for the present guesstimate—there lies a large, promising, and challenging field for the future."

Lord Beaverbrook, on a visit to the United States several years ago, nearly missed the Queen Mary at Southampton. An hour before the liner sailed a rear tire on his car burst on the Winchester by-pass, 14 miles away. No jack was among the tools. A passing truck-driver offered his but it would not fit the car. Only by riding in the truck six miles to a roadside garage was Lord Beaverbrook able to reach the dock a few minutes before the last gang plank was taken up. On the Cunarder he expostulated vivaciously to his fellow travelers that he did not need this annoyance to enlist him among the "standardizers" and against the "specialists."— From *Standardization*, British Ministry of Supply.



This Month's Standards Personality...

Irwin D. Wolf's high standing in retailing was recognized in October, 1953 when he was cited to the Hall of Fame in Distribution by the Boston Conference on Distribution. He is chairman of the Executive Committee of the National Retail Dry Goods Association. Now vice-president and general manager of Kaufmann's Department Stores, he has been with the Stores for 22 years. He is also vice-president and director of The May Department Stores Company. A past president of the Marketing Executives Society, Mr Wolf's interests and abilities run a wide gamut, from merchandising to the theatre to sports to politics to publicity. He is prominent in civic, hospital, and settlement work as well as in retailing. He helped set up the Civic Light Opera Association of Greater Pittsburgh and is vice-president and chairman of its executive committee. He is chairman of the United Negro College Fund in the Pittsburgh area; has been president of the Allegheny Council of the Boy Scouts of America; until recently was president of the Irene Kaufmann Settlement; and has been president of the Montefiore Hospital for over five years.

WHAT IS YOUR QUESTION?

Where can I get data on the industrial application of standard finishes on metallic surfaces as indicated by the symbol RMS$\sqrt{32}$?

ASA has no information on the industrial application of standard finishes indicated by this symbol. Any information available will be welcomed.

Do you foresee any revision of the American Standard B46.1-1947, Surface Roughness, Waviness and Lay, in the near future?

A subcommittee is now working on a revision of this standard. Although no draft is available as yet, it is expected that one will be completed within the next few months. One of the changes that will be made concerns the specification of methods of evaluating roughness height. At a meeting in February 1952, Sectiona Committee B46 unanimously adopt-l ed a resolution "that at the next revision of ASA B46.1, all roughness height options be removed and arithmetic average deviation from the mean surface be inserted as the roughness height rating."

We have adopted the ABC proposal on cylindrical fits as published in the July issue of STANDARDIZATION. However, our accessory suppliers do not follow this system. As a result we receive accessory parts with completely different limits and they do not fit with our equipment. Is the ABC proposal not yet in general use?

The ABC proposed system of cylindrical fits was published in STANDARDIZATION to determine whether American industry is interested in using such a system. The ASA Committee on Limits and Fits, B4, has indicated that if industry in this country is interested in such a system, the committee will go ahead to develop one. It would base its work on the ABC proposal. At the present time there is no American Standard system of cylindrical fits such as the one proposed as an ABC system.

AT A DINNER at the Hotel Ambassador, New York, September 17, Cyril Ainsworth, technical director of the American Standards Association, acting in his capacity as president of the American Museum of Safety, presented awards to those railroads that showed the best safety records for 1952.

Gold medals were presented to the three railroads that led their respective groups in safety during the last year. Above, left to right—D. V. Fraser, Missouri-Kansas-Texas Railroad; H. J. McKenzie, St Louis Southwestern; W. C. Beamon, Texas Mexican.

Certificates were given in recognition of their safety record to two switching and terminal companies and nine railroads,—three from each of three railroad regions. Below—During the ceremony, H. E. Simpson, president, Baltimore & Ohio Railroad (left) receives certificate from Mr Ainsworth (right).
James G. Lyne, editor of *Railway Age* and chairman of the Harriman Award Committee of the Museum, looks on (center).

Roads and terminals that received the certificates were: Union Pacific; Baltimore & Ohio; Norfolk & Western; Lehigh & Hudson River; Atlantic & Danville; Lake Superior & Ishpeming; Central of Georgia; Lehigh Valley; Duluth, Missabe & Iron Range; Chicago Union Station; Portland Union Terminal.

Photos Courtesy Railway Age

JAPANESE SCIENTISTS HONOR DR DEMING

Dr Edwards Deming, one of the scientists responsible for the original thinking that led to statistical control of quality, has been honored by the Union of Japanese Scientists and Engineers. The Union is giving an annual Deming Prize to the individual who has made the greatest contribution to research, education, and use of industrial statistics in Japan, and to the company that has made the best practical application of statistical methods of any Japanese company. Dr Deming was a member of the ASA War Committee that developed the American War Standards on Statistical Quality Control.

DATA ON BEARINGS AVAILABLE

Reports from Washington indicate that the Department of Defense Section on Bearings of the Federal Supply Catalog has now been issued. It consists of the following:

Group 31, Part I, Table of Abbreviations and Alphabetical Index of Names.

Group 31, Part II, Class 3110, Alphabetical Listing of Item Identifications; Bearings, Antifriction, Unmounted, Includes: Ball Bearings; Roller Bearings; Balls; Races. Excludes: Plain Bearings.

Group 31, Part II, Class 3130, Alphabetical Listing of Item Identifications; Bearings Mounted, Includes: Pillow Blocks; Cartridge Units; Flange Units; Take-up Units; Hanger Units; Flat Box Units; Step Box Units.

Group 31, Part III, Index to MIL-STD-102, Code Numbers.

This Section on Bearings is now available from the Superintendent of Documents, U.S. Government Printing Office, Washington 25, D.C. It is published as a unit consisting of Parts I, II, and III.

4

STANDARDIZATION IN THE STATE OF CONNECTICUT

by Samuel P. Kaidanovsky

Legal Authority for Standardization

The authority and responsibility for standardization is vested in the Standardization Committee as set forth in Section 256 of the General Statutes of Connecticut, Revision of 1949, which reads as follows:

"There shall continue to be a standardization committee which shall consist of the supervisor of purchases and such administrative heads of state departments or their authorized agents as may be designated for that duty by the governor. The standardization committee shall classify the requirements of the state government for all supplies, materials and equipment which may be purchased by the state; shall adopt as standards the minimum number of qualities, sizes and varieties of such supplies, materials, and equipment consistent with the successful operation of the state government and shall prepare, adopt and promulgate written specifications describing such standards. In the preparation and revision of any such standard specifications, said committee shall seek the advice, assistance and cooperation of the state departments, agencies and institutions concerned in order to ascertain their precise requirements. Each specification adopted for any commodity shall satisfy the requirements of the state departments, agencies and institutions which are to make use of the same. Each standard specification describing the commodity, shall, until revised or rescinded, apply alike in terms and effect to each future purchase and contract for such commodity."

The Standardization Committee

Membership of the Standardization Committee.—The development of standards is vested by State statute in the Standardization Committee, the members of which are designated for that duty by the Governor with the exception of the Supervisor of Purchases, who is by law a member of the Standardization Committee.

The Standardization Committee is at present composed of 11 members: The Director of the Connecticut Agricultural Experiment Station; the Superintendent of the Connecticut Reformatory; the Commissioner of the Department of Education; the Commissioner of the Department of Food and Drugs; the Commissioner of the Department of Health; the Commissioner of the State Highway Department; the Superintendent of the Norwich State Hospital; the Superintendent of the Southbury Training School; the President of the University of Connecticut; the Adjutant General of the State; and the Supervisor of Purchases, Purchasing Division, Department of Finance and Control.

Assignment of Standardization Projects.—The Standardization Committee directs the assignment of commodities for standardization with the advice, suggestions, and recommendations of the Purchasing Division buyers and state agencies.

Determination of Priorities for Standardization.—The Standardization Committee gives priority in the development of standard specifications to common use items involving major expenditures and which indicate the greatest potential savings in procurement through standardization.

Review of Proposed Standard Specification.—A copy of each proposed specification is submitted for review to members of the Standardization Committee immediately after having been drafted and duplicated.

Adjustment of Areas of Conflict.—In case of valid dissensions registered by any agency or agencies relative to any proposed standard specification, the Standardization Committee adjusts any area of conflict.

Standards Section

To implement the statutory duties of the Standardization Committee, a Standards Section, a unit of the Purchasing Division, was established approximately two years ago. The Standards Section is primarily concerned with the development, processing, reproducing, distributing and insuring proper use of standard specifications and the acceptable brands list. This section, administered by a Chief Standards Engineer, is directed by the Standardization Committee through the Supervisor of Purchases. At the present time this is Mr C. L. Magnuson, who is acting also in his capacity as a member of the Standardization Committee.

Advisory Committee on Standards

The Standards Section, with prior approval of the Standardization Committee, is authorized to appoint voluntary advisory committees to assist in the development of technological data necessary for the preparation of standard specifications. Such committees may be established either for specific commodities or for classes of commodities, as may be necessary. Thirteen such committees have been appointed to date. Each of these committees is assigned to specific classes of commodities, as follows: clothing,

Mr Kaidanovsky, Consulting Engineer, is former chairman, Federal Inter-departmental Standards Council; technical consultant, Federal Specifications Board; and editor, STANDARDS WORLD.

textiles, dry-goods, and notions; drugs and chemicals; feed, forage, and animal bedding; food; food preparation and serving equipment and supplies; fuels, greases and lubricants; furniture and furnishings; horticultural supplies and material; laundry, cleaning, and disinfecting supplies; lumber and wood products; motor vehicle and transportation equipment and supplies; paints and related products; office supplies and equipment.

Advisory Committee on Standards

(*a*) Prepares recommendations for proposed standard specifications and acceptable brands lists for presentation to the Advisory Committee;
(*b*) Encourages the widest possible competition within the industry concerned;
(*c*) Recommends the initiation or cancellation of amendments and revisions to standard specifications and acceptable brands lists, whenever it becomes necessary or desirable;
(*d*) Promotes the greatest reasonable standardization of commodities consistent with the successful operation of the State Government; and
(*e*) Assists the Standards Section in the development of technological data, in the surveying of state agency needs, the performance of tests to predetermine adequacy of items, and the formulation of proposed standard specifications.

Liaison Advisors on Standards

A Standards Engineer serves as a liaison advisor to each Advisory Committee together with the Purchasing Division buyer responsible for the procurement of the specific commodity or class or commodities assigned to the respective Advisory Committee on Standards. The liaison advisor, representing the Purchasing Division assists the committee chairman and committees in their preparation of standard specifications and acceptable brands lists and in the review of drafts of such documents.

Procedures for the Development of Standard Specifications

Consultation with Interested Parties.—After a standardization project has been approved by the Standardization Committee, the Standards Section consults with and seeks the advice and cooperation of the:

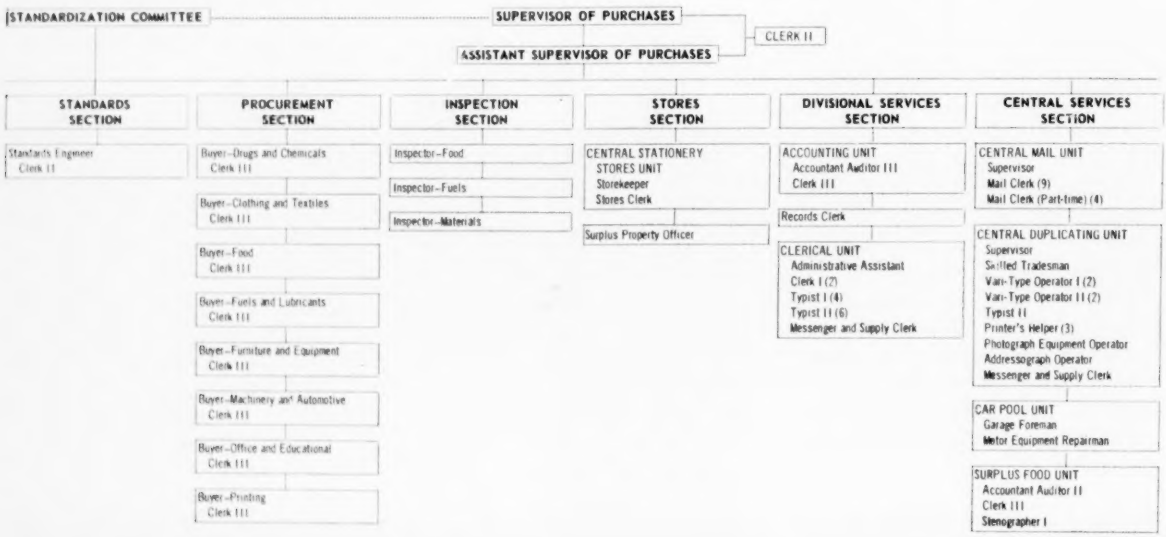
(*a*) Purchasing Division buyer responsible for the procurement of the subject commodity;
(*b*) State agencies to ascertain that their requirements with respect to the standard of quality, type, size, etc are met;
(*c*) Individuals having technical competence in the field within which standard specifications are to be developed; and
(*d*) Advisory committees on standards.

Submission of a Proposed Specification for Review and Comments.—After a draft of a proposed specification has been prepared by the Standards Section, copies are submitted for review and comments to:

(*a*) The Standardization Committee;
(*b*) Minimum of ten reputable manufacturers, producers or other appropriate original sources of supply and principal suppliers;
(*c*) Respective buyer charged with the responsibility for procurement of the commodity described in the specification;
(*d*) Members of any advisory committee;
(*e*) Individuals in state service who have lent technical assistance in the formulation of the subject specification;
(*f*) Other governmental agencies;

STATE OF CONNECTICUT
DEPARTMENT OF FINANCE AND CONTROL
PURCHASING DIVISION

ORGANIZATION CHART
AS OF SEPT. 15, 1952



William Aksomitas, Chief Standards Engineer, State of Connecticut

(*g*) Scientific, technical and trade organizations concerned with the technical aspects of the subject specification.

Acceptance of a Proposed Specification by Sources of Supply.—When a majority of the sources of supply replying concur in or approve the proposed specification as written, or with minor modifications having little or no effect on the technical aspects of the proposed specification, the specification is considered acceptable from the supply point.

Nonacceptance of the Proposed Specification by Sources of Supply.—In the event replies from the sources of supply indicate an apparent major defect or defects in the technical aspects of a proposed specification, the Standards Section prepares a revised draft of the proposed specification correcting the defect or defects. Such a revised draft is then processed in the same manner as an original draft.

Variance between acceptance and nonacceptance of the Proposed Specification by Sources of Supply.—In such cases the Standards Section assembles all data readily available on the subject specification for submission to the Standardization Committee for instructions as to the future course to be pursued.

Submission of a Proposed Specification to Using Agencies.—If the proposed specification has been accepted by sources of supply, it is then submitted to the using agencies for approval, to meet statutory requirements which provide that "Each specification adopted for any commodity shall satisfy the requirements of the state departments' agencies, and institutions which are making use of them."

Submission of a Proposed Specification to the Standardization Committee for Final Approval.—After approval of a proposed specification by using agencies, the specification is submitted to the Standardization Committee for appropriate action.

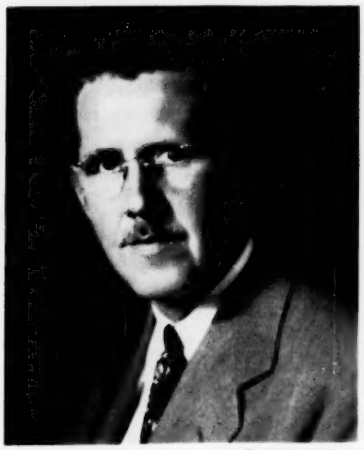
Promulgation of the Approved Specification by the Standardization Committee.—After a specification has been approved by the Standardization Committee, it is then promulgated as a standard specification, printed and distributed to all state agencies.

There are at present 23 specifications approved by the Standardization Committee, 51 proposed specifications, many of which are being used for purchasing. It is planned to print the first index of the State of Connecticut Specifications in January, 1954 and annually thereafter.

Amendments to or Revisions of Standard Specifications.—Proposed amendments to or revisions involving a change of technological data of specifications are processed in the same manner as an original proposed specification.

Amendments or revisions consisting of correction of errors (editorial modifications) are not submitted for comments to industry or using agencies; they are subject only to approval by the Standardization Committee.

The procedure under which the Standards Section operates is detailed in the "Standard Specification Preparation Manual." Part III of the Manual—Form and Instructions for the Preparation of Standard Specifications—is patterned after the Outline of Form for the Preparation of Federal Specifications.



Chase News Photo

C. L. Magnuson, Supervisor of Purchases, State of Connecticut

Interim Use of Proposed Standard Specifications

On recommendation of the Supervisor of Purchases, the Standardization Committee may approve the use of any designated proposed standard specification for procurement purposes prior to its formal adoption by said committee as a standard specification.

Enforcement of Standard Specifications

Section 256 of the General Statutes, Revision 1949 provides in part that "Each standard specification describing the commodity shall until revised or rescinded, apply alike in terms and effect to each future purchase and contract for such commodity."

Section 56 *b* of the 1951 Supplement to the General Statutes provides in part that "It shall be the duty of the supervisor of purchases . . . (*b*) to enforce standard specifications established in accordance with Section 256."

Exemption from Use of Standard Specifications

During an emergency, the use of standard specifications may be temporarily modified in favor of an alternate emergency specification.

The Standardization Committee may temporarily modify a standard specification to permit specific purchases of a commodity which does not conform in all respects to the requirements of the standard specification describing such commodity.

Acceptable Brands Lists

It has been widely recognized that

Checking fuel oils purchased under annual contract award. W. Robert Drescher (standing), fuels and lubricants buyer, is observing fuel oil gravities. John Otterbein, fuels inspector, is determining viscosity of the oils.

it is neither possible nor practicable to develop detailed specifications for many products. The alternate method for establishing acceptable quality is accomplished through "Acceptable Brands Lists." These are developed through pre-qualification of acceptable brands of a product by such means as inspection, laboratory analyses, test data, performance records and other pertinent information. Procedures for the development of acceptable brands lists are detailed in Part V of the "Standard Specifications Preparation Manual." There are at present 5 proposed "Acceptable Brands Lists."

Procurement Classification System

The Purchasing Division is in the process of setting up a new Procurement Classification System, patterned somewhat after the Procurement Catalog recently completed by the Commonwealth of Virginia. For the time being it is not contemplated to establish a complete detailed catalog but rather a listing, under class and group of titles of some 8500-9000 commodities.

In connection with this new classification, there is being set up a new schedule of purchases covering all commodity groups in which such scheduling is possible or practical.

Procedures for Inspection of Commodities

Legal Authority for Inspection.—The authority and responsibility of the Supervisor of Purchases for inspection are set forth in Section 251, 1949 Supplement to the General Statutes, which reads in part as follows:

> ". . . said Supervisor shall adopt and promulgate, and may from time to time amend rules and regulations for the following purposes: . . . (5) to prescribe the manner of inspecting all deliveries of supplies, materials and equipment and of making chemical and physical tests of samples submitted with bids and samples of deliveries to determine whether or not the specifications are being complied with; . . . "

Purpose of Inspection.—The purpose of inspection is "to protect the using agencies from receiving material below the level of acceptable quality."

Principal Function of the Inspection Section.—

(*a*) Inspect and accept or reject all deliveries made to facilities operated under direct jurisdiction of the Purchasing Division;
(*b*) Conduct check inspections of deliveries made to state agencies;
(*c*) Review the work of inspection done by designated personnel of other state agencies.

The Inspection Section is headed by a Senior Inspector, serving also as Technical Consultant to the Standardization Committee, who reports to the Supervisor of Purchases. Agency inspectors have been designated to supplement the efforts of the Inspection Section. This method is designed to provide means for inspecting all deliveries as thoroughly as available facilities will permit.

Time and Place of Inspection.—Most purchases are inspected at the receiving point, after delivery; however, inspection is sometimes necessary at point of manufacture.

Methods of Inspection.—There are five methods of inspection: (1) visual, (2) certification (physical tests and chemical analyses conducted by manufacturers and certified copies of such tests furnished upon request), (3) mechanical, (4) performance, and (5) analytical.

Testing Laboratories.—The Purchasing Division's Laboratory is run by the Inspection Section under the supervision of the Senior Inspector. Only a very small amount of basic equipment is provided to conduct general tests of bid samples as well as delivery samples. Maximum use is made of laboratory facilities of the following state agencies: Highway Department, Health Department, Agricultural Experiment Station, Department of Education, University of Connecticut, and the Food and Drugs Commission.

Advisory Committee on Testing Facilities.—The Supervisor of Purchases may appoint an Advisory Committee on Testing Facilities, consisting of laboratory directors of state-owned laboratories under the chairmanship of the Senior Inspector.

The procedures by which the Inspection Section operates are detailed in an Inspection Manual.

Standardization Achievements by the State of Connecticut

The last two years witnessed many advancements in the operations of the Purchasing Division of the State of Connecticut in the field of Standardization. The Standards Section has been activated by the employment of technical personnel assigned on a full time basis to develop standard specifications for common use items. A manual for preparation of standard specifications has been published. A new procurement classification system is in process of being set up, to be followed by a commodity catalog. Attention has been given to the development of a sound program of inspection of deliveries of commodities, and standard operating procedures for inspection have been issued for this purpose.

Standards From Other Countries

*Members of the American Standards Association may borrow from the ASA Library copies of any of the following standards recently received from other countries. Orders may also be sent to the country of origin through the ASA office. The titles of the standards are given here in English, but the documents themselves are in the language of the country from which they were received. For the convenience of our readers, the standards are listed under their general UDC classifications. An asterisk * indicates that the standard is available in English as well. In ordering a standard please refer to the number following the title.*

626 HYDRAULIC ENGINEERING

Germany (DNA)

Drainage pipes — DIN 1180
Drainage. Shape and dimensions of closed canals — DIN 19540

627 NATURAL WATERCOURSES. RIVERS. PORTS AND ROADSTEADS

Germany (DNA)

Rules for construction of dams — DIN 19700, Bl.1

Spain (IRATRA)

Blocks for pier building — UNE 24001

628 SANITARY TECHNOLOGY AND ENGINEERING. SEWERAGE. HEATING. ILLUMINATION

Germany (DNA)

Magnitudes, symbols, designations of units in the field of illuminating engineering — DIN 5031
Two sizes of traps — DIN 1209/10
Basic rules for artificial interior lighting — DIN 5035

Italy (UNI)

15 standards for asbesto-cement sewerage pipes and fittings — UNI 3274/88

Netherlands (HCNN)

2 standards for the flue pipes and wall connections for gas installation — V 1777/78
Salt glazed pipes. Tests and dimensions — N 56/57

Poland (PKN)

Colors of different industrial luminous signals — PN T-01300

United Kingdom (BSI)

Neck and flange dimensions of interior lighting fittings — BS 364:1953
Colors of light signals — BS 1376:1953
Glossary of terms used in illumination and photometry — BS 233:1953

629.1 LOCOMOTION. TRANSPORT ENGINEERING

France (AFNOR)

Power take off — NF R 124-01
Coupling for fuel pump — NF R 163-06

Germany (DNA)

Direction of rotation of automobile engines and firing order of cylinders — DIN 73021
Manhole covers — DIN 83402

Japan (JISC)

Felt packing — JIS D 2402
Clutch housing flanges — JIS D 4304
Automobile tire valves (6 standards) — JIS D 4207/12*
Inspection of automobile electrical equipment (5 standards) — D.1603/5, 1607/8*
Spark plugs — JIS D 5101*
Head lamps — JIS D 5501*
Tail lamps — JIS D 5502*
Stop lamps — JIS D 5503*
Electric horns — JIS D 5701*
Direction indicator — JIS D 5702*
Windshield wipers: electric and vacuum type — JIS D 5703/4*
Rear sight mirrors — JIS D 5705
Marine type globe valve, cast iron for 20 kg/sq cm pressure — JIS F 7313*
Wooden deck bolts — JIS F 1501
Roller chocks — JIS F 2003
Eye- and ring-plates — JIS F 3410, 3412/3
Ship bell — JIS F 3614
Methods of factory testing marine steam turbine — JIS F 4201
Standard apparatus for marine steam turbine — JIS F 6001
Ship hinged scuttles and lights — JIS F 2401/2

Netherlands (HCNN)

Welding studs — V 1577

Poland (PKN)

General symbols and definitions of flight mechanics — PN L-02150
General classification of aircraft — PN L-02501
Rules for care of aviation motors — PN L-07103
Rules for care of passengers' parachutes — PN L-07130/31
4 standards for different kinds of lumber used in aviation — PN L-19000/02, -19010
Geometric characteristics of propellers — PN L-33001
Fuel filter for aircraft engines — PN L-61500

631 AGRICULTURE IN GENERAL. AGRONOMY

Ireland (IIRS)

Ground limestone — I.S. 53:1953

Poland (PKN)

6 standards for different parts and accessories of agricultural machines — PN R-55091, -56103, -56106, -56126/27, -56129
Artificial manures — PN C-87000
Threshing machine part — PN R-63007
Different grades of wheat — PN R-74002
31 standards for agricultural machinery and products — PN Section R

Portugal (IGPAI)

Basic principals for standardization of agricultural machinery — P 29

Sweden (SIS)

Pitchforks — SMS 1449
Spades for drain digging — SMS 1527

632 PROTECTION OF PLANTS. DISEASES AND PESTS. PHYTOPATHOLOGY

Australia (SAA)

Standard code of recommended practice in the sampling of agricultural insecticides, fungicides and pest destroyers — A.S. No.CN.1-1953

Germany (DNA)

Agricultural sprayers — DIN 11209
Parts of spray nozzles — DIN 11207

636/639 STOCKBREEDING. ANIMAL PRODUCTS

Germany (DNA)

Beehives and frames — DIN 11660/62
Wooden beehives — DIN 11637

Netherlands (HCNN)

Determination of fat content in milk by gravimetric method of Röse-Gottlieb — N 1308

Poland (PKN)

10 standards for different natural fodder — PN R-64 . . .
17 standards for natural and preserved food products — PN A-74 . . ., -85 . . ., -86 . . .
Different raw hides, specifications — PN P-22002
5 standards for different kinds of fodder — PN R-64769/70, -64779, -64782/83
3 standards for milk and milk products — PN A-86012, -86015/16
7 standards in the field of farm livestock — PN Section A (Series 86000)

642 MEALS. TABLE SERVICE

Poland (PKN)

Table spoons and forks — PN A-55005, -55007
8 standards for household chinaware — PN Section A (Series 12500)

643.3 KITCHENS. KITCHEN EQUIPMENT

Czechoslovakia (CSN)

Domestic gas ranges — CSN 386501

France (AFNOR)

Gas ranges — NF D 32-325

Portugal (IGPAI)

3 standards for different sizes of aluminum pots — P 38/40

645 FURNITURE. FURNISHING. UPHOLSTERY

Israel (SII)

Wooden cupboards for service room — S.I. 81

United Kingdom (BSI)

Steel combination mattresses (diamond-mesh, square-mesh, and spiral-spring types) — BS 1366:1953
Steel lay-on mattresses (spiral-spring types) — BS 1419:1953

651.4/.7 OFFICE ADMINISTRATION AND ROUTINE

Netherlands (HCNN)

Lay-out of different industrial forms — V 3020

655 PRINTING. PUBLISHING. BOOK TRADE

New Zealand (NZSI)

Standard specification for sizes and arrangement of government publications — NZSS 598, July, 1951

Poland (PKN)

Printers' galleys, composing stick — PN N-95011/13
Type points — PN N-95031/34

656 TRANSPORT ORGANIZATION

Germany (DNA)

Colored traffic lights — DIN 6163

Italy (UNI)

Statistical data relative to railways — UNI 3268
Calculation of average coefficient of utilization of railway cars — UNI 3273

Netherlands (HCNN)

5 different standards for traffic regulation by signs — N 1922/29

657 ACCOUNTANCY. BOOKKEEPING

Germany (DNA)

Forms and sizes of promissory notes, etc	DIN 5004

658 ORGANIZATION OF WORK. INDUSTRY. BUSINESS ORGANIZATION

India (ISI)

Statistical quality control	I.S. 397

Poland (PKN)

2 standards for statistical quality control	PN N-03002,-03010
Quality control	PN Section N-03001

66.0 CHEMICAL TECHNOLOGY. INDUSTRIAL CHEMISTRY

Netherlands (HCNN)

Exact micro-determination of the melting point	V 3018

Poland (PKN)

4 standards for laboratory equipment	PN C-13041, -53007, Z-65315,-65320
65 standards including petroleum products, fuels, reagents, etc	PN Section C

United Kingdom (BSI)

Butyl acetylricinoleate	BS 1992:1953
Secbutyl alcohol	BS 1993:1953
Dichloromethane (methylene chloride)	BS 1994:1953
Di-2-ethylhexyl phthalate	BS 1995:1953
Dimethyl phthalate	BS 1996:1953
Triphenyl phosphate	BS 1998:1953
Tritolyl phosphate (tricresyl phosphate)	BS 1999:1953
Glycerol triacetate (triacetin)	BS 1997:1953

661 CHEMICAL PRODUCTS IN THE NARROWER SENSE

Belgium (IBN)

Lithophone	NBN 265

India (ISI)

Power alcohol	I.S. 322
Denatured spirit	I.S. 324
Ethyl alcohol	I.S. 321
Rectified spirits	I.S. 323

Japan (JISC)

Amylase for industrial purpose	JIS K 7001

Spain (IRATRA)

Methanol, chemically pure	UNE 30032

U.S.S.R.

Glauber salt, medical	OST 6319
Borax, technical	OST 1011
Superphosphate	OST 10918
Calcium chloride	OST 10932
Zinc chromate, pigment	OST 10937

United Kingdom (BSI)

Lead chrome and zinc chrome for paints	BS 282, 389:1953
Brunswick or lead chrome green (pure and reduced) for paints	BS 303:1953
Cyanides for electroplating	BS 622:1953

662 PYROTECHNICS. EXPLOSIVE MATERIALS. COMBUSTIBLES

France (AFNOR)

Solid combustibles. General terminology related to fuel washing process	NF M 03-019

Germany (DNA

5 standards for different street covers for gas main manholes	DIN 3581/85

Netherlands (HCNN)

Determination of the cooking properties of solid mineral fue by the dilatometer test	V 934

Poland (PKN)

6 standards for technical and elementary analysis of coal	PN G-04500/04, -09601
3 standards for solid fuel analysis	PN C-04329, -04344,-097956
Pentaerithritol	PN C-86021
2 standards for explosives for mining work	PN C-86010, -86014

U.S.S.R.

Rules for designing domestic stoves	GOST 2127

668.1 SOAP INDUSTRY

Japan (JISC)

Soap for export	JIS K 3305

Poland (PKN)

2 standards for soaps	PN C-77004, -77047

668.3 ADHESIVES. GLUES. GELATINS

India (ISI)

Shellac adhesives for steam flange joints	I.S. 425

Announcing New Books . . . .

• **ASTM Standards on Bituminous Materials for Highway Construction, Waterproofing, and Roofing.** (American Society for Testing Materials, 1916 Race St, Philadelphia 3, Pa. April 1953. 436 pp. Heavy paper cover. $3.50)

This edition contains 105 standard and tentative specifications, test methods, recommended practices, and definitions of terms for bituminous materials for highway construction, waterproofing, and roofing. The publication is sponsored jointly by ASTM Committee D-4 on Road and Paving Materials and Committee D-8 on Bituminous Waterproofing and Roofing Materials.

• **Review of ASTM Research, as studied by the technical committees of the Society.** (American Society for Testing Materials, 1916 Race St, Philadelphia 3, Pa. May, 1953. No charge.)

This summary of the work of ASTM technical committees was prepared by the Administrative Committee on Research. It is the first such summary since 1947, and includes a summary of early reports as well as up-to-date information.

• **Buying for the Bell System.** (Western Electric Company, 195 Broadway, New York. 1953. No Charge.)

This small booklet (with cartoon illustrations) offers an amusing explanation of why Western Electric's standardization and coordinated quantity buying saves the Bell System money and assures quality in material and supplies.

• **Manual of Traffic Engineering Studies.** (Accident Prevention Department, Association of Casualty and Surety Companies, 60 John St, New York 38, N. Y. Second edition. 1953. 278 pp. $3.75)

This edition is completely revised and greatly expanded. Intended as a guide for police, engineers, planners, transportation officials, and students, and offering material for a factual approach to traffic problems, it has been checked by nationally known traffic and transportation engineers. It covers 28 different traffic studies conducted by recognized practicing traffic engineers. Among these are studies on accident records and facts; high accident frequency locations; driver observance of stop signs, speed reduction signs, and traffic signals; route congestion; through traffic; and parking inventory.

• **Standard Costs for Manufacturing.** By Stanley B. Henrici. (McGraw-Hill Publishing Company, 330 West 42nd St, New York 36, N. Y. McGraw-Hill Accounting Series. Second edition. 1953. $5.50)

A description of how to set standards, how to install a standard-cost system, and how to operate those phases of the system relating to accounting entries as well as those relating to managerial control. The book discusses standards for materials, maintenance and other services, and applying standards to operations as well as the methods of accounting for determination and presentation of standard costs.

• **Research Operations in Industry.** Papers delivered at the Third Annual Conference on Industrial Research, June, 1952, with selected papers from the first and second conferences. Sponsored by the Department of Industrial Engineering, Columbia University. David B. Hertz, Editor. (King's Crown Press, Columbia University, New York. October, 1953. $8.50)

The volume covers a broad field, beginning with the philosophy of industrial research, and including economics, costs, and budgeting; personnel in industrial research; planning of research programs; planning of research facilities; research methodology and design of experiment; operations research; and communications and technical information services.

• **National Accounts Studies, Norway.** (Published by the Organization for European Economic Cooperation, 2, rue André-Pascal, Paris-16. June, 1953.)

In carrying out the pledge of European members of the Organization for European Economic Cooperation "to combine their economic strength" and "to join together to make the fullest collective use of their individual capacities and potentialities," the OEEC is publishing a series of reports on the national accounts of OEEC member countries. This most recent report shows how adjustments have been made to the official estimates of Norwegian market prices, expenditures, and income for 1938 and 1946-1952 in putting them into the Standard Tables and Standard Accounts of the Standardized System followed by OEEC. It also explains the sources and methods on which the official estimates are based. Earlier reports have been issued on Denmark, Switzerland, France, and the Netherlands.

AMERICAN STANDARDS

Status as of November 11, 1953

Legend

Standards Council — Approval of Standards Council is final approval as American Standard; usually requires 4 weeks.

Board of Review — Acts for Standards Council and gives final approval as American Standard; action usually requires 2 weeks.

Standards Boards — Approve standards to send to Standards Council or Board of Review for final action; approval by standards boards usually takes 4 weeks.

Building

American Standard Published—

Specifications for Gypsum Wallboard Interior Finishes, A97.1-1953 $0.35
Sponsor: American Institute of Architects Gypsum Association

In Construction Standards Board—

National Plumbing Code, A40.8 (Revision of A40.7-1949)
Sponsors: American Public Health Association; American Society of Mechanical Engineers

Method of Sampling Magnesium Oxychloride Compositions and Ingredients, ASTM C 237-51; ASA A88.10

Method of Test for Sieve Analysis of Magnesium Oxychloride Compositions, Aggregates and Fillers, ASTM C 238-51; ASA A88.11

Method of Test for Sieve Analysis of Plastic Calcined Magnesia, ASTM C 239-51; ASA A88.12

Methods for Chemical Analysis of Magnesium Sulfate, Technical Grade, ASTM C 244-52; ASA A88.13

Methods for Chemical Analysis of Magnesium Chloride, ASTM C 245-52; ASA A88.14

Methods for Physical Testing of Magnesia for Magnesium Oxychloride Cements, ASTM C 246-52; ASA A88.15

Methods of Test for Ignition Loss and Active Calcium Oxide in Magnesium Oxide for Use in Magnesium Oxychloride Cements, ASTM C 247-52; ASA A88.16

Method of Test for Bulk Density of Magnesium Oxychloride Cements, ASTM C 248-52; ASA A88.17

Method of Slump Test for Field Consistency of Magnesium Oxychloride Cements, ASTM C 249-52; ASA A88.18

Specifications and Method for Field Determination of Specific Gravity of Gauging Solutions for Magnesium Oxychloride Cements, ASTM C 250-52; ASA A88.19

Method for Mixing Magnesium Oxychloride Cement Compositions with Gauging Solution (for Preparation of Specimens for Laboratory Tests), ASTM C 251-52; ASA A88.20

Method of Test for Linear Contraction of Magnesium Oxychloride Cements, ASTM C 252-52; ASA A88.21

Methods of Test for Linear Change of Magnesium Oxychloride Cements, ASTM C 253-52; ASA A88.22

Method of Test for Setting Time of Magnesium Oxychloride Cements, ASTM C 254-52; ASA A88.23
Sponsors: American Society for Testing Materials; National Bureau of Standards

Chemical Industry

American Standard Published—

Method of Test for Toluene Insoluble Solid Matter in Rosin, ASTM D 269-52; ASA k21.1-1953 $0.25
Sponsor: American Society for Testing Materials

Drawings and Symbols

American Standard Published—

Letter Symbols for Radio, Y10.9-1953 $1.00
Sponsor: American Society of Mechanical Engineers

In Graphics Standards Board—

Letter Symbols for Acoustics, Y10.11
Sponsor: American Society of Mechanical Engineers

Electrical

American Standards Published—

Specifications for Rubber-Insulated Tree Wire, ASA C8.16-1953 (Revision of C8.16-1940) $0.50
Covers the requirements for insulated tree wire suitable for use on overhead electric distribution systems. Requires that, when properly installed, the wire will resist deterioration due to age, and wear caused by rubbing against branches of trees.

General Service Incandescent Lamps, C78.100-1953 (Revision of C78.100-1949) $0.25
Listing of dimensional and electrical characteristics so as to ensure interchangeability.

Infrared Lamps for 115-125 Volt Service, C78.106-1953 (Revision of C78.106-1949) $0.25
Listing of essential dimensional and electrical characteristics so as to ensure interchangeability.

Projector and Reflector Spot and Flood Incandescent Lamps for 115, 120, and 125 Volts, C78.107-1953 (Revision of C78.107-1949) $0.25
Listing of dimensional and electrical characteristics so as to ensure interchangeability.

Miniature Incandescent Lamps, C78.140-1953 (Revision of C78.140-1949) $0.25
Listing of miniature incandescent lamps by trade numbers together with essential dimensional and electrical characteristics so as to ensure interchangeability.

R-30 Bulb Medium Screw Base Incandescent Lamps, C78.251-1953 $0.25
Consisting of outline drawing and essential bulb dimensions so as to ensure interchangeability.
Sponsor: Electrical Standards Board

In Electrical Standards Board—

Specifications for Soft or Annealed Copper Wire, ASTM B3-53T (Revision of ASTM B3-52T; ASA C7.1-1953)

Specifications for Hard-Drawn Copper Wire, ASTM B1-53T (Revision of ASTM B1-52T; ASA C7.2-1953)

Specifications for Bronze Trolley Wire, ASTM B9-53 (Revision of ASTM B9-52; ASA C7.5-1953)

Specifications for Tinned Soft or Annealed Copper Wire for Electrical Purposes, ASTM B33-53T (Revision of ASTM B33-52T; ASA C7.4-1953)

Specifications for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard or Soft, ASTM B8-53 (Revision of ASTM B8-52; ASA C7.8-1953)

Specifications for Hard-Drawn Copper Alloy Wires for Electrical Purposes, ASTM B105-53 (Revision of ASTM B105-52; ASA C7.10-1953)

Specifications for Rope-Lay-Stranded Copper Conductors Having Bunch-Stranded Members for Electrical Purposes, ASTM B172-53T (Revision of ASTM B172-52T; ASA C7.12-1953)

Specifications for Rope-Lay-Stranded Copper Conductors Having Concentric-Stranded Members for Electrical Conductors, ASTM B173-53T (Revision of ASTM B173-52T; ASA C7.13-1953)

Specifications for Bunch-Stranded Copper Conductors for Electrical Conductors, ASTM B174-53T (Revision of ASTM B174-52T; ASA C7.14-1953)

Specifications for Lead-Coated and Lead-Alloy Coated Soft Copper Wire for Electrical Purposes, ASTM B189-53T (Revision of ASTM B189-52T; ASA C7.15-1953)

Specifications for Hard-Drawn Aluminum Wire for Electrical Purposes, ASTM B230-53T (Revision of ASTM B230-52T; ASA C7.20-1953)

Specifications for Concentric-Lay-Stranded Aluminum Conductors, Hard-Drawn, ASTM B231-53 (Revision of ASTM B231-52; ASA C7.21-1953)

Specifications for Concentric-Lay-Stranded Aluminum Conductors, Steel Reinforced (ACSR), ASTM B232-53T (Revision of ASTM B232-52T; ASA C7.22-1953)

ASTM Method of Determination of Cross-Sectional Area of Stranded Conductors, ASTM B263-53T; ASA C7.29
Sponsor: American Society for Testing Materials

A-C Power Circuit Breakers (Revision of C37.4-1945)

Methods of Determining the RMS Value of a Sinusoidal Current Wave and a Normal-Frequency Recovery Voltage (Revision of C37.5-1945)

Schedules of Preferred Ratings for Power Circuit Breakers (Revision of C37.6-1949)

Test Code for Power Circuit Breakers (Revision of C37.9-1945)

Sponsor: Electrical Standards Board

Reaffirmation Approved—

Definitions and General Standards for Wire and Cable, C8.1-1944 R1953

Specifications for Slow-Burning Wire and Cable, C8.9-1942 R1953

Specifications for Weather-Resistant Saturants and Finishes for Aerial Rubber Insulated Wire and Cable, C8.19-1939 R1953

Sponsor: Electrical Standards Board

Pool Cathode Mercury-Arc Power Converters, C34.1-1949 R1953

Sponsor: American Institute of Electrical Engineers

Withdrawal Being Considered—

Impregnated Paper Insulation of Solid Type for Lead-Covered Power Cable, C8.10-1942

Rubber Insulation for Wire and Cable for General Purposes, C8.11-1936

Sponsor: Electrical Standards Board

Mechanical

American Standard Approved—

Knurling, B5.30-1953

Sponsors: American Society of Mechanical Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association; Society of Automotive Engineers

In Board of Review—

Buttress Screw Threads, B1.9

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Designation and Working Ranges of Surface Grinding Machines of the Reciprocal Table Type, B5.32

Designation and Working Ranges of Plain Cylindrical Grinding Machines, B5.33

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers; Metal Cutting Tool Institute; National Machine Tool Builders' Association

Standard Submitted—

Practices for Stationary Diesel Engines, B68

Sponsor: Diesel Engine Manufacturers Association

Reaffirmation Approved—

Nomenclature, Definitions, and Letter Symbols for Screw Threads, B1.7-1949 R1953

Sponsors: American Society of Mechanical Engineers; Society Automotive Engineers

Markings for Grinding Wheels and Other Bonded Abrasives, B5.17-1949 R1953

Life Test of Single-Point Tools made of Materials other than Sintered Carbide, B5.19-1946 R1953

Sponsor: American Society of Mechanical Engineers

Withdrawal Being Considered—

Acme and Other Translating Threads, B1.3-1941

Sponsors: American Society of Mechanical Engineers; Society of Automotive Engineers

Motion Pictures

American Standards Approved—

Specifications for 3000-Cycle Flutter Test Film for 16-Mm Sound Motion Picture Projectors, PH22.43-1953 (Revision of Z22.43-1946)

Specifications for Multi-Frequency Test Film for Field Testing 16-Mm Sound Motion Picture Projection Equipment, PH22.44-1953 (Revision of Z22.44-1946)

Sponsor: Photographic Standards Board

In Photographic Standards Board—

Dimensions for 16-Mm Film Perforated One Edge, PH22.12 (Revision of Z22.12-1947)

8-Mm Motion Picture Film Usage in Camera, PH22.21 (Revision of Z22.21-1946)

8-Mm Motion Picture Film Usage in Projector, PH22.22 (Revision of Z22.22-1947)

Dimensions for 16-Mm Film Perforated Two Edges, PH22.5 (Revision of Z22.5-1947)

A and B Windings of 16-Mm Film Perforated One Edge, PH22.75

Aperture Calibration of Motion Picture Lenses, PH22.90

Dimensions for 35-Mm Motion Picture Short-Pitch Negative Film, PH22.93

Sponsor: Society of Motion Pictures and Television Engineers

Photography

American Standards Published—

Dimensions for Photographic Paper Sheets, PH1.12-1953 (Revision of Z38.1.43-1947 and Partial Revision of Z38.1.6-1943) $0.25

Dimensions for Stereo Still Pictures on 35-Mm Film, PH3.11-1953 $0.25

Requirements for Photographic Grade Blotters, PH4.10-1953 $0.25

Specification for Photographic Grade Ammonium Chloride, PH4.183-1953 $0.25

Specification for Photographic Grade Ammonium Sulfate, PH4.184-1953 $0.25

Sponsor: Photographic Standards Board

In Board of Review—

Designation for Thickness of Photographic Paper, PH1.1 (Revision of Z38.1.44-1944)

Dimensions for 35-Mm Film Magazines for Still Picture Cameras, PH1.14 (Revision of Z38.1.47-1946)

Dimensions for Molded-Type Cores for Photographic Film and Paper Rolls, PH1.13 (Revision of Z38.1.48-1947)

Dimensions for Industrial X-ray Sheet Film (Inch Sizes), PH1.15 (Revision of Z38.1.25-1947)

Dimensions for Graphic Arts Sheet Film (Inch Sizes), PH1.16 (Revision of Z38.1.26-1947)

Dimensions for Medical X-ray Sheet Film (Inch and Centimeter Sizes), PH1.17 (Revision of Z38.1.27-1947)

Dimensions for Professional Portrait and Commercial Sheet Film (Inch Sizes), PH1.18 (Revision of Z38.1.28-1947)

Specification for Photographic Grade Sodium Thiosulfate, Anhydrous, $Na_2S_2O_3$, (Anhydrous Hypo), PH4.250 (Revision of Z38.8.250-1949)

Specification for Photographic Grade Sodium Thiosulfate, Crystalline, $Na_2S_2O_3$, $5H_2O$, (Crystal Hypo), PH4.251 (Revision of Z38.8.251-1949)

Specification for Photographic Grade Ammonium Thiosulfate, 60 Percent Solution, $(NH_4)_2S_2O_3$, (Ammonium Hypo Solution), PH4.252

Specification for Photographic Grade Ammonium Thiosulfate, $(NH_4)_2S_2O_3$, (Ammonium Hypo), PH4.253

Temperature for Photographic Processing Solutions, PH4.5 (Revision of Z38.8.1-1944)

Method for Converting Weights and Measures for Photographic Use, PH4.6 (Revision of Z38.8.2-1945)

Method for Determining the Thiosulfate Content of Processed Photographic Film, PH4.8

Sponsor: Photographic Standards Board

Pipes and Fittings

American Standard Published—

Cast-Iron Screwed Drainage Fittings, B16.12-1953 $1.00

Sponsors: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

American Standard Approved—

Steel Pipe Flanges and Flanged Fittings, B16.5-1953 (Revision of B16e-1939, and Supplement No. 1, B16e6-1949)

Sponsors: American Society of Mechanical Engineers; Heating, Piping, and Air Conditioning Contractors National Association; Manufacturers Standardization Society of the Valve and Fittings Industry

Safety

American Standard Published—

Safety Color Code for Marking Physical Hazards and the Identification of Certain Equipment, Z53.1-1953 (Revision of Z53.1-1945) $0.50

Standard colors to indicate information such as: location of fire protection equipment; danger; stop; removal of guards or protective covers; striking, stumbling, or tripping hazards; location of emergency equipment; traffic aisleways; and radiation hazards. Includes technical definitions for the colors used. Does not cover navigation or transportation controls.

Standardized Symbols

Graphical Symbols on blueprint drawings save hundreds of man hours of drafting time that would otherwise be spent in drawing the actual object.

What's New on American Standard Projects

CORRECT YOUR STANDARD—American Standard Machine Tapers, B5.10-1953—

The following errors have been brought to the attention of the publisher.

Page 8. Table 2. In Col. E remove the fourth digit after the decimal point; and replace the left section of the illustration, as well as that over Table 3, with the following:

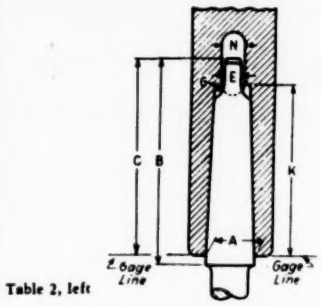


Table 2, left

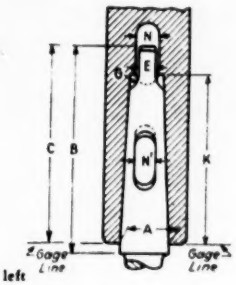


Table 3, left

Page 10, Table 4 and Page 12, Table 5. Replace illustrations with those given below.

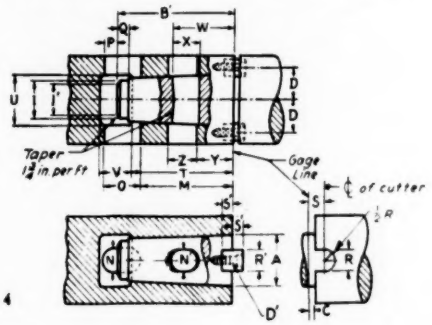


Table 4

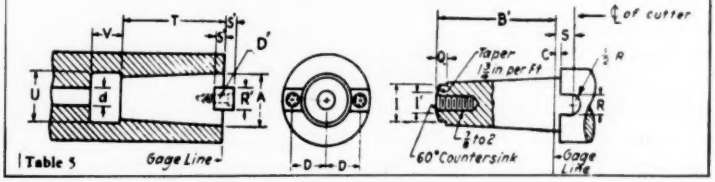


Table 5

Gage Line

Nomenclature for Metal End Products, B63—

This new project is for the purpose of establishing definitions in terms of dimensions as a means of designating metal end products such as bar, plate, strip, sheet, wire, rod, pipe, tube, tubing, hose, etc. This would take the place of the present method of designating these products on the basis of manufacturing process or of equipment used to produce the various items. For example, at the present time, some call a product "sheet" while others call the same product "strip." Following a decision of the Mechanical Standards Board, the American Society for Testing Materials has been invited to accept sponsorship.

Code for Pressure Piping, B31—

Sponsor: The American Society of Mechanical Engineers

A revised basis for establishing allowable stress values for materials specified in the American Standard, Code for Pressure Piping, B31.1-1951, has been published as Supplement No. 1 to this Code. This Supplement, designated as B31.1a-1953, places the revised data in the hands of the Code user pending the Code's entire revision which is expected some time in 1954.

Copies of Supplement No. 1, Code for Pressure Piping, B31.1a-1953, are available at $1.00 each.

Transformers, Regulators, and Reactors, C57—

Sponsor: Electrical Standards Committee

Comments are invited on a Proposed American Standard for overhead-type distribution transformers, just published for a period of trial and study. This is identified as American Standard for Distribution Transformers, Overhead Type, C57.20 (EEI Publication No. 53-1; NEMA Publication No. 114-1953). This is the fifth report issued by the Joint Committee of the Edison Electric Institute and the National Electrical Manufacturers Association since organization of the committee in 1938. It provides standards for the entire range of overhead-type distribution transformers. It contains design standards for certain mechanical and electrical features of overhead-type single-phase and three-phase distribution transformers rated 500 kva and smaller, high voltage 67,000 volts and below, low voltage 15,000 volts and below.

The Proposed American Standard is being distributed for trial and study by the American Standards Association. Copies are available from ASA at $1.00 each.

Textile Test Methods, L14—

Sponsors: American Association of Textile Chemists and Colorists; American Society for Testing Materials

A revision in the 1951 edition of the American Standard General Methods of Testing Woven Fabrics has been approved for publication by the American Society for Testing Materials, the Society informs ASA. This standard is identified as ASTM D 39-49; ASA L14.68-1951. The tentative revision consists of a change in Section 10(b) reading as follows: "The face of one jaw of each clamp measures 1 by 1 in. or 1 by 2 in., the longer dimension being parallel to the direction of the application of the load. The other jaw of

each clamp shall be at least the same dimensions as stated above. Each set of jaws of each clamp, and the two clamps, shall be in line."

Acoustics, Vibration, and Mechanical Shock, Z24—

Sponsor: Acoustical Society of America

The broad field of work which has actually been under way since the formation of this committee has been recognized in a new scope, just approved: "Standards, specifications, and methods of measurement and test in the fields of acoustics, vibration, and mechanical shock, including terminology, units, scales, and levels, and relations to safety, tolerance, and comfort."

Revision of the American Standard Acoustical Terminology, Z24.1-1951, is actively in progress, the committee heard at its meeting October 15. An entirely new section to provide standard terms for shock and vibration is already completed. The committee is voting on whether to publish these new terms as a Proposed American Standard for a period of trial before final approval.

For the purpose of uniformity, MKS units will be used in all Z24 standards, and conversion tables to the CGS system will be included, the committee decided.

In cooperating with the International Electrotechnical Commission's technical committee 29, the United States has accepted responsibility for preparation of draft standards on Loudspeakers and Ultrasonic Equipment. It has also agreed to cooperate in the preparation of standards on Magnetic Recording and Vocabulary.

The committee is also cooperating with this group to bring about greater international uniformity in the use of acoustical terms.

Because of differences in the principles on which observers are selected for determination of the normal threshold of hearing, an Exploratory Group is being set up to consider revision of the reference levels for audiometers. For example, in Great Britain healthy ears are used as controls, whereas in the United States "average" ears are used. It is expected that this group will consult with the medical profession in order to work in harmony with their ideas.

Work is still continuing on standards for various types of shock-testing machines and is near completion on the high intensity shock-testing machine and on the shock-testing machine for electronic components.

The study of sound levels and loudness is being taken up by an Exploratory Group entitled "Sound Rating Scales." This group has been given 1½ years in which to finish its study.

Since the American Standard on Noise Measurement, Z24.2-1942, is now entirely out of date, the committee is voting by letter ballot on whether to recommend its withdrawal as an American Standard.

An over-all study of the relation of hearing loss to noise exposure in industry is being made. A preliminary report was presented to a workshop group at the National Standardization Conference (to be published in STANDARDIZATION, January 1954). This is to be widely circulated in the hope that it will be used and evaluated by industry. It is hoped that use of the report will result in development of standards setting noise levels for various industrial locations.

In addition to the present exploratory group on bio- and psychoacoustic criteria, two new exploratory groups are to be set up. One will study criteria for speech interference; the other will study criteria for community noise.

The next meeting of Z24 is to be held June 23, 1954, in New York.

Advisory Committee on Stretchers and Stretcher Carriers—

A committee organized to advise the American Standards Association in its relations with Technical Committee 75 of the International Organization for Standardization held its first meeting September 16. Draft ISO Recommendation No. 11 on Stretchers, Stretcher Carriers, and Hospital Trolleys was reviewed in line with the specification of the Armed Services Medical Materiel Standardization Committee. The committee recommended a number of changes in the proposed international dimensions in agreement with the American specification.

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233)

Of STANDARDIZATION published monthly at New York, N. Y., for Oct 1, 1953.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:

Publisher: American Standards Association, Inc, 70 East 45th St, New York 17. Editor: Ruth E. Mason, 70 East 45th St, New York 17. Managing editor: none. Business manager: none.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)

American Standards Association, Inc, 70 East 45th St, New York 17; Roger E. Gay, President, ASA and President, The Bristol Brass Corp, Bristol, Conn; Edward T. Gushée, Vice-President, ASA and Vice-President, Detroit Edison Co, Detroit, Mich; George F. Hussey, Jr, Managing Director, ASA, 70 East 45th St, New York 17.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)

None.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was—(This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

RUTH E. MASON.

Sworn to and subscribed before me this 26th day of October, 1953.

LYDIA I. GUSTAFSSON.

(Seal) (My commission expires March 30, 1955.)

LYDIA I. GUSTAFSSON,
Notary Public, State of New York.
Qualified in Bronx County,
No. 03-1608150.
Cert. filed with County Clerk N. Y. Co.
Commission Expires March 30, 1955.

Role of Standards

(*Continued from page 360*)

tation on the freedom of designers would be most unwelcome both to manufacturers and to the public, and the "line" is therefore to be drawn by a series of performance tests. The principle is that of applying to articles of furniture measured stresses and strains which simulate actual conditions of use in the home. It is a new technique in this or any other country, and will doubtless have to be refined as experience is gained, but I can say that some of the industry's best practical men who were skeptical of these performance tests at first have been converted to strongest support.

With the advent of many more demands for standards affecting consumer and household goods, it was decided that we must have available some direct and reliable expression of consumer opinion, as presented by the women of the country, not in a search for that elusive and illusory "woman's point of view" but simply because the overwhelming bulk of consumer buying is done by women. So our Women's Advisory Committee was set up, and—speaking with some experience in these matters—I believe that it is quite unique as a consultative group. Through its representatives we reckon to have direct access to the views and ideas of well over two million women spread all over the country. I am not sure whether it is true that two million women cannot be wrong, but I do know that great deference is paid to their views by the technicians and business leaders who work through the British Standards Institution for the creation of sound industrial standards.

I am very conscious that the reputation of the BSI—both here and in other countries—rests on the integrity and far-sightedness of those many industries which have provided the driving force and "expertise" of the BSI. This, indeed, is the prime source of the confidence which is now widely placed in us by industry and by Government. Our task today is bringing us more into the public eye, and the aim will continue to be to help industry to function at its highest possible level of efficiency and to the greater good of the community as a whole.

ASTM ACTS ON STANDARDS

By action of its Administrative Committee on Standards, the American Society for Testing Materials in September approved a number of new specifications and test methods. It also revised a number of existing standards. Actions taken are as follows:

New Tentatives Approved

Specifications for:

- Copper and Copper-Alloy Die Forgings (Hot-Pressed) (B 283-53 T)
- Clay Flue Lining (C 315-53 T)
- Gypsum Concrete (C 317-53 T)
- Gypsum Formboard (C 318-53 T)
- Laminated Thermosetting Decorative Sheets (D 1300-53 T)
- ASTM Hydrometers (E 100-53 T)

Methods of Test for:

- API Gravity of Petroleum and Its Products by Hydrometer (D 287-53 T)
- Chlorine Requirements of Industrial Water and Industrial Waste Water (D 1291-53 T)
- Odor of Industrial Waste Water (D 1292-53 T)
- Determination of pH of Industrial Waste Water (D 1293-53 T)
- Residual Odor of Lacquer Solvents and Diluents (D 1296-53 T)
- No-Dirt-Retention Time of Traffic Paint (D 1297-53 T)
- Specific Gravity of Petroleum and Its Products by Hydrometer (D 1298-53 T)
- Shrinkage of Molded and Laminated Thermosetting Plastics at Elevated Temperature (D 1299-53 T)
- Spectrochemical Analysis of Aluminum and Its Alloys by the Point-to-Plane Spark Technique (E 101-53 T)

Classification for:

- Single- and Double-Screened Ground Refractory Materials (C 316-53 T)

Tentatives Revised

Specifications for:

- Wrought Copper and Copper-Alloy Rod, Bar, and Shapes (B 249-52 T)
- Wrought Seamless Copper and Copper-Alloy Pipe and Tube (B 251-52 T)
- Inorganic Aggregates for Use in Interior Plaster (C 35-52 T)
- Hydraulic Hydrated Lime for Structural Purposes (C 141-42)
- Extra Strength Clay Pipe (C 200-50 Ts
- Asbestos-Cement Corrugated Sheet) (C 221-49 T)
- Asbestos-Cement Roofing Shingles (C 222-49 T)
- Asbestos-Cement Siding Shingles and Clapboards (C 223-49 T)
- Asbestos-Cement Pressure Pipe (C 296-52 T)
- Gasoline (D 439-52 T)

Methods of:

- Chemical Analysis of White Pigments (D 34-51 T)
- Spectrochemical Analysis of Zinc-Alloy Die Castings for Minor Constituents and Impurities (E 27-43 T)

Revision of Standard and Reversion to Tentative

Specifications for:

- Zinc-Base Alloy Die Castings (B 86-52)

Tentative Revision of Standard

Specifications for:

- Copper Plates for Locomotive Fireboxes (B 11-49)
- Copper Rods for Locomotive Staybolts (B 12-52)
- Seamless Copper Water Tube (B 88-51)
- Seamless Brass Tube (B 135-52)
- Manganese Bronze Rod, Bar, and Shapes (B 138-52)
- Copper-Alloy Condenser Tube Plates (B 171-52)
- Structural Clay Load-Bearing Wall Tile (C34-52)
- Masonry Cement (C 91-51)
- ASTM Thermometers (including tentative additions) (E 1-53)

Method of Test for:

- Normal Consistency of Hydraulic Cement (C 187-49)
- Distillation of Tars and Tar Products (D 20-52)
- Distillation of Cut-Back Asphaltic Products (D 402-49)

Definitions of Terms Relating to:

- Thermal Insulating Materials (C 168-51)
- Materials for Roads and Pavements (D 8-52)

Withdrawal

Specifications for:

- The following Emergency Alternate Provisions with respect to Molybdenum: A 161, A 182, A 199, A 200, A 209, A 213, A 217, A 250, A 335, A 352
- Silver Solders (B 73-29)
- Quicklime and Hydrated Lime for Use in the Textile Industry (C 48-24)

Method of:

- Spectrochemical Analysis of Zinc for Lead, Iron, and Cadmium (E26-43 T; Replaced by E 27-53 T)

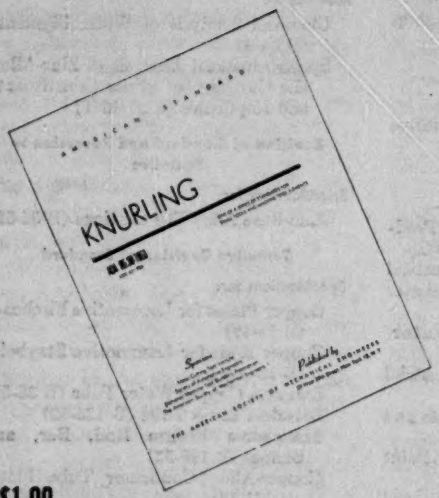
• • **The Japanese Industrial Standards Committee** is the 29th member of the International Electrotechnical Commission.

DO YOU HAVE TR
WITH KNUR

The new Am

KNURLING,

Covers



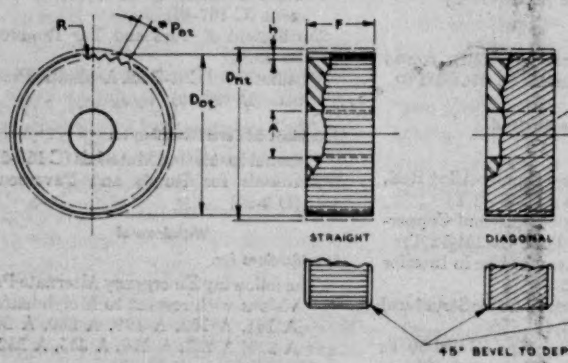
The two
contain d

(1

$1.00

Just off the press!

Typical cylindrical knurls
(Figure 4 from American Standard, Knurling, B5. 30-1953).



ORDER YOUR COPY FROM

American Standards Association
INCORPORATED

70 East 45 Street,
New York 17

Please s
at $1.00.

Remitta

Name...

Address.

City....

ROUBLE
URLING PROBLEMS?

American Standard

NG, B5. 30-1953

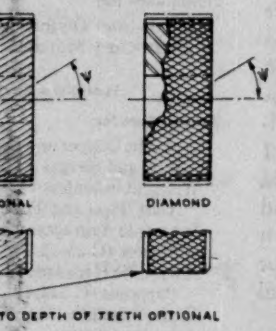
vers—

Knurling tools designed on the basis of diametral pitch for the production of straight, diagonal, and diamond knurling on cylindrical surfaces for general purpose or precision work

two main tables of the American Standard in data on—

(1) knurling practice with standard diameter pitch knurling tools, for blank diameters from 3/32 to 1 inch, inclusive, and for diametral pitches 160, 128, 96, and 64.

(2) Diagonal and diamond knurling produced by straight tooth cylindrical knurls for 15 to 145 teeth on work; diametral pitch 64, 96, 128, and 160; and five different angles between axis of work and knurl axis (25, 30, 35, 40, and 45 degrees)



The American Standard was developed by Technical Committee No. 27 of ASA Sectional Committee B5, Small Tools and Machine Tool Elements, jointly sponsored by the American Society of Mechanical Engineers; Society of Automotive Engineers; National Machine Tool Builders Association; and Metal Cutting Tool Institute.

ease send me ..... copies of American Standard, Knurling (B5.30-1953) $1.00.

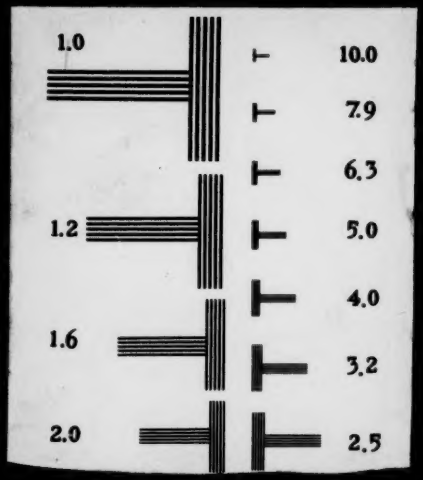
mittance enclosed ..... Send invoice.....

me.....

dress.....

y..... Zone..... State.....

RESOLUTION CHART



100 MILLIMETERS

INSTRUCTIONS Resolution is expressed in terms of the lines per millimeter recorded by a particular film under specified conditions. Numerals in chart indicate the number of lines per millimeter in adjacent "T-shaped" groupings.

In microfilming, it is necessary to determine the reduction ratio and multiply the number of lines in the chart by this value to find the number of lines recorded by the film. As an aid in determining the reduction ratio, the line above is 100 millimeters in length. Measuring this line in the film image and dividing the length into 100 gives the reduction ratio. Example: the line is 20 mm. long in the film image, and $100/20 = 5$.

Examine "T-shaped" line groupings in the film with microscope, and note the number adjacent to finest lines recorded sharply and distinctly. Multiply this number by the reduction factor to obtain resolving power in lines per millimeter. Example: 7.9 group of lines is clearly recorded while lines in the 10.0 group are not distinctly separated. Reduction ratio is 5, and $7.9 \times 5 = 39.5$ lines per millimeter recorded satisfactorily. $10.0 \times 5 = 50$ lines per millimeter which are not recorded satisfactorily. Under the particular conditions, maximum resolution is between 39.5 and 50 lines per millimeter.

Resolution, as measured on the film, is a test of the entire photographic system, including lens, exposure, processing, and other factors. These rarely utilize maximum resolution of the film. Vibrations during exposure, lack of critical focus, and exposures yielding very dense negatives are to be avoided.

THIS PUBLICATION IS REPRODUCED BY AGREEMENT WITH THE COPYRIGHT OWNER. EXTENSIVE DUPLICATION OR RESALE WITHOUT PERMISSION IS PROHIBITED.